

ORGAN

VK-9

SERVICE NOTES

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SPECIFICATIONS

VK-9 (ORGAN + STAND)

- KEYBOARD
Upper manual: 61 notes (C scale)
Lower manual: 61 notes (C scale)
Pedal board: 25 notes (C scale)
- MANUAL DRAWBAR
I, II, III, IV, each with
6-2/5' (I only), 16', 5-1/3', 8', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1'
- BASS DRAWBAR
Flute 16', 8'; Bright 8'
- PRESET
Upper manual: I - Chime; II - Trumpet;
III - Full Tibias; IV - Theater Brass
Lower manual: I - Dulciana; II - Open Diapason;
III - Full Accompaniment; IV - Bombarde
** Each timbre is readjustable.*
- PERCUSSION
Click attack; Decay fast; 2ND (4'); 3RD (2-2/3'); 5TH (1-3/5'); Volume soft
- EXTERNAL SYNTHESIZER PORTAMENTO
Time; Flyback
- UPPER SUSTAIN I, II
- PERCUSSION/SUSTAIN SELECTOR
- BASS
Lower To Pedal; Pedal To Lower; Envelope I, II
- REVO CONTROL
Revo (Leslie) Cancel; Chorus; Slow; Fast
- VIBRATO
Chorus/Vibrato; Depth I, II
VIBRATO & REVO: Lower; Upper
- CONNECTION SOCKETS
- OUTPUT
Revo (8P); Leslie (9P); Normal; Bass
- EXTERNAL EFFECTS
Upper (Send/Return)
Lower (Send/Return)
Bass (Send/Return)
- EXTERNAL INPUT
Before Expression; After Expression
- EXTERNAL SYNTHESIZER CONTROL JACKS
KCV/GATE
- OTHERS
Brilliance; Pedal Connector; Output Level Changeover
Switch; Drawbar Selector (I, II, III); Volume; Organ Tune;
Power Switch

- POWER CONSUMPTION
37W
- DIMENSIONS
1,290(W) x 270/1,000(H, excl/incl stand) x 745(D)mm
50.8(W) x 10.6/39.4(H, excl/incl stand) x 29.4(D)in
- WEIGHT
72.6kg, 160lbs.
- ACCESSORY
Exclusive stand

VKP-9 (PEDAL BOARD + EXPRESSION PEDAL)

- KEYBOARD
25 notes (C scale)
- DIMENSIONS
1025/750(W) x 145/102(H) x 930(D)mm
40.3/29.6(W) x 5.7/4.2(H) x 36.6(D)in
- WEIGHT
45kg, 99lbs
- ACCESSORY
Exclusive expression pedal (Weight: 200g, 0.44lbs); Vinyl
cover; Connection cord

VKB-9 (BENCH)

- SEAT
- STAND
- BACK RAIL
- KNOB BOLT
- ASSEMBLY DIMENSIONS
1,080(W) x 95/180(H) x 400(D)mm
42.5(W) x 3.7/7.1(H) x 15.8(D)in
- WEIGHT
10.5kg, 23.2lbs









VKE-1 (EXPRESSION PEDAL)








- CONNECTION CORD
- DIMENSIONS
158(W) x 95/180(H) x 290(D)mm
6.2(W) x 3.7/7.1(H) x 9.5(D)in.

* Specifications are subject to change without notice.

NOTES:

- UNLESS OTHERWISE SPECIFIED
ALL RESISTOR VALUES ARE IN OHMS, 1/4WATT, $\pm 5\%$.
ALL CAPACITOR VALUES ARE IN MICROFARADS.
- PARTS SYMBOL UNLESS OTHERWISE SHOWN, ARE AS FOLLOW.

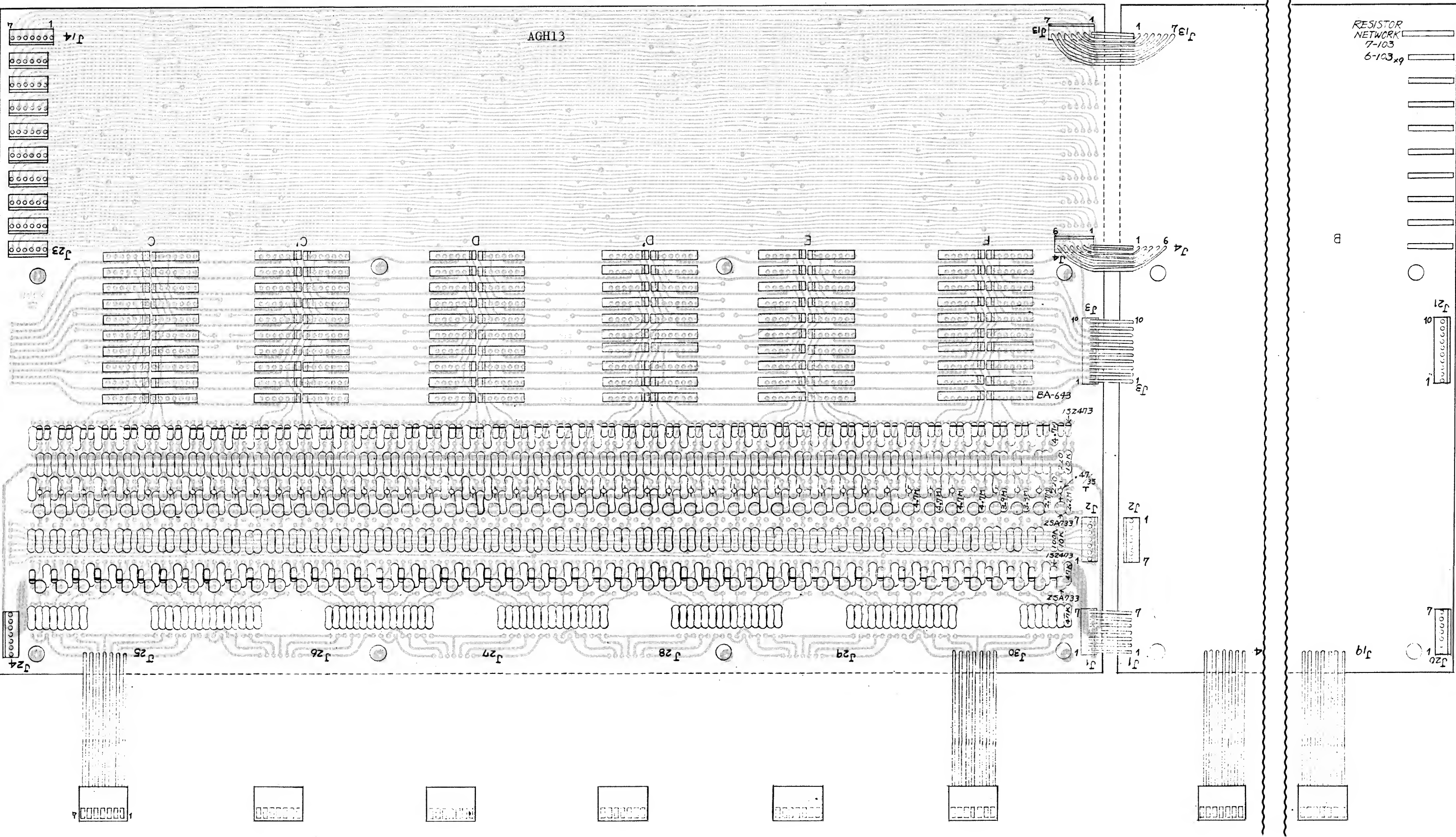
-  2SA733P
-  2SA640
-  2SC945P
-  2SC1222
-  2SK30AGR
-  CARBON, 1/4W, $\pm 5\%$
-  METAL FILM, 1/4W, $\pm 1\%$
-  SOLID, 1/2W, $\pm 10\%$

-  MYLAR
-  CERAMIC
-  ELECTROLYTIC
-  TANTALUM
-  JUMP WIRE
-  1S2473
-  CONNECTOR NO.
PIN NO.

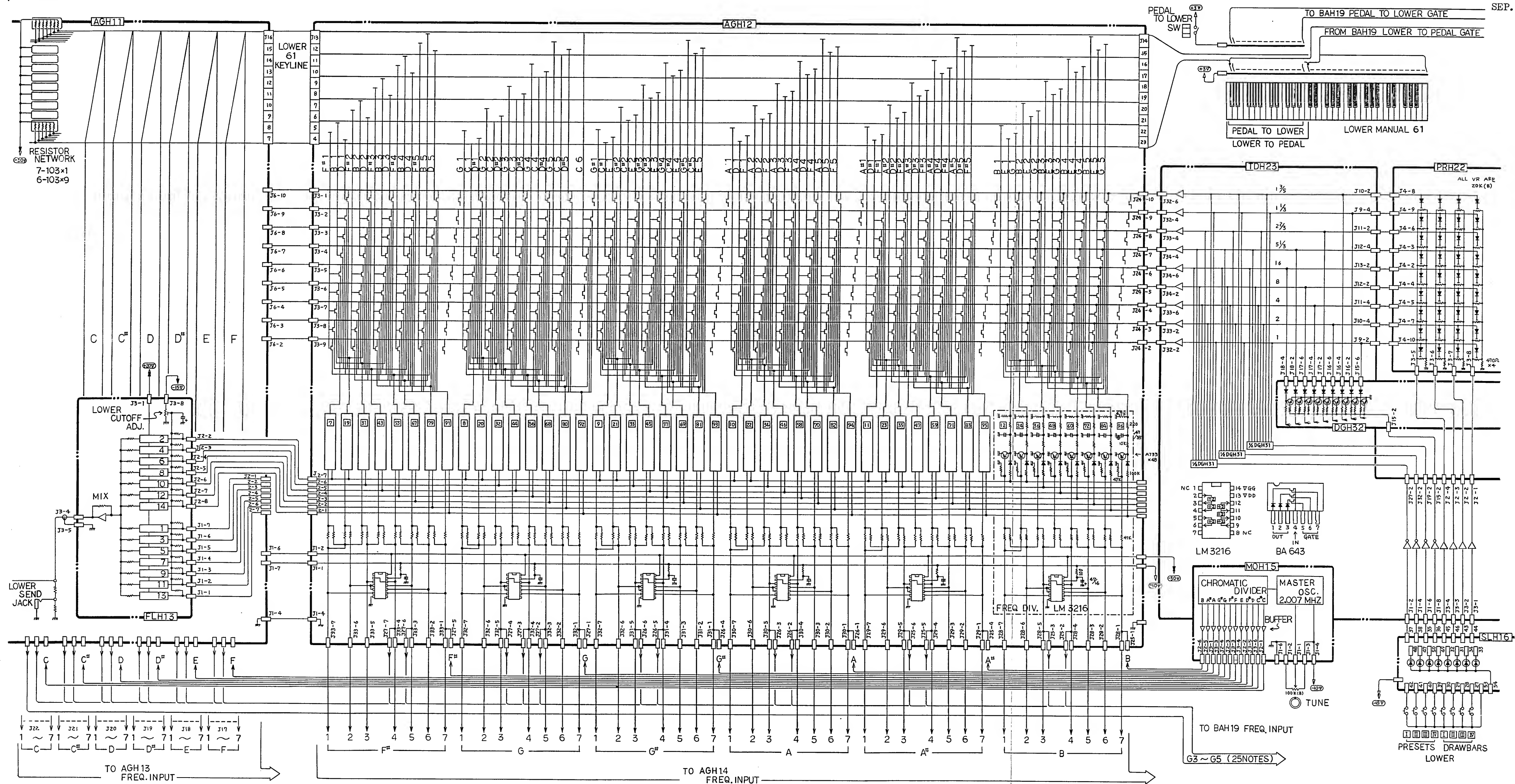
UPPER KEYBOARD KEYING IC TONE GATE

AGH-13 (144H013)

AGH-14 (144H014)



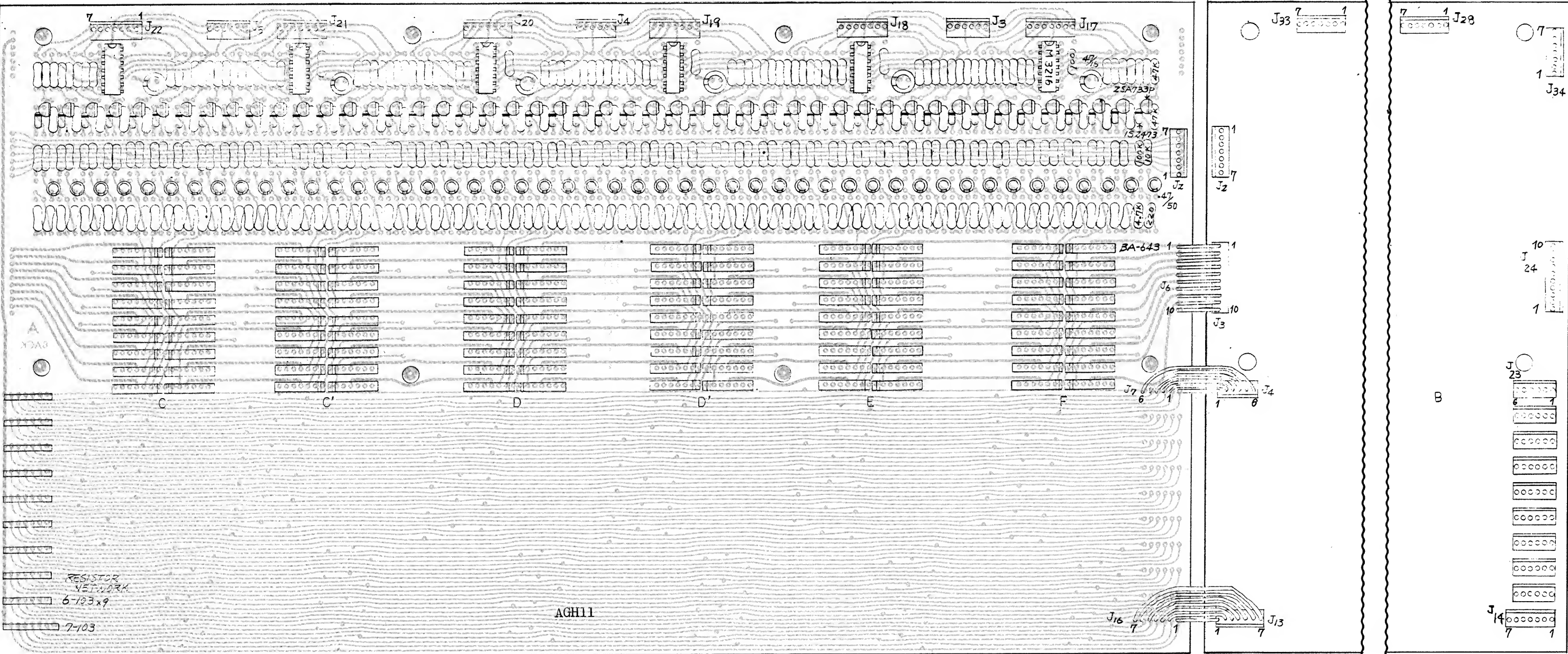




LOWER KEYBOARD KEYING IC, TONE GATE, DIVIDER

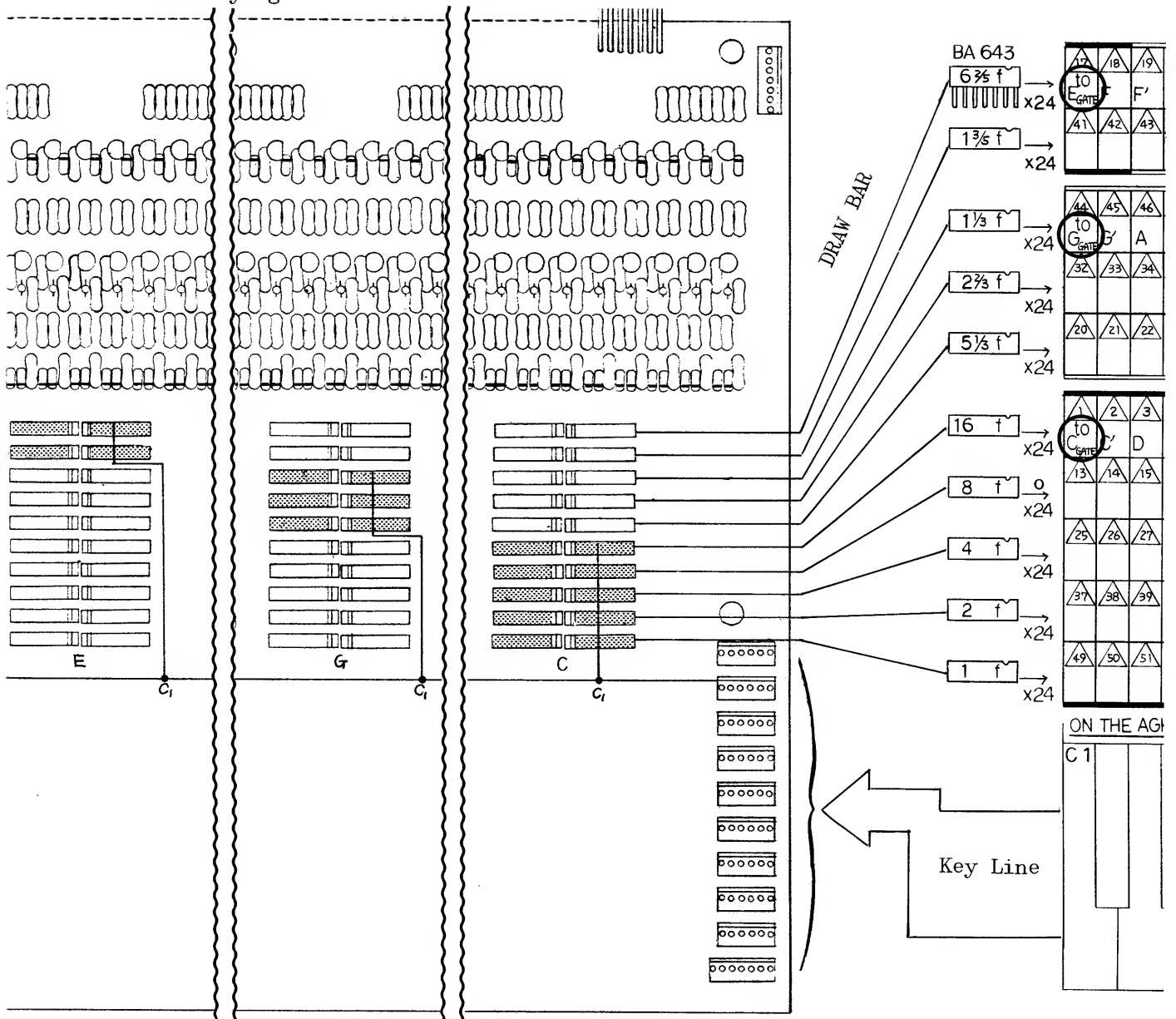
AGH-11 (144H011)

AGH-12 (144H012)





How to Locate Keying IC



HOW TO LOCATE KEYER IC

The legends (C, G, E) in the above figure indicate that the IC's (BA643) located thereon give drawbar voltages of each foot in the table on the right to Tone Gate of the same legend.

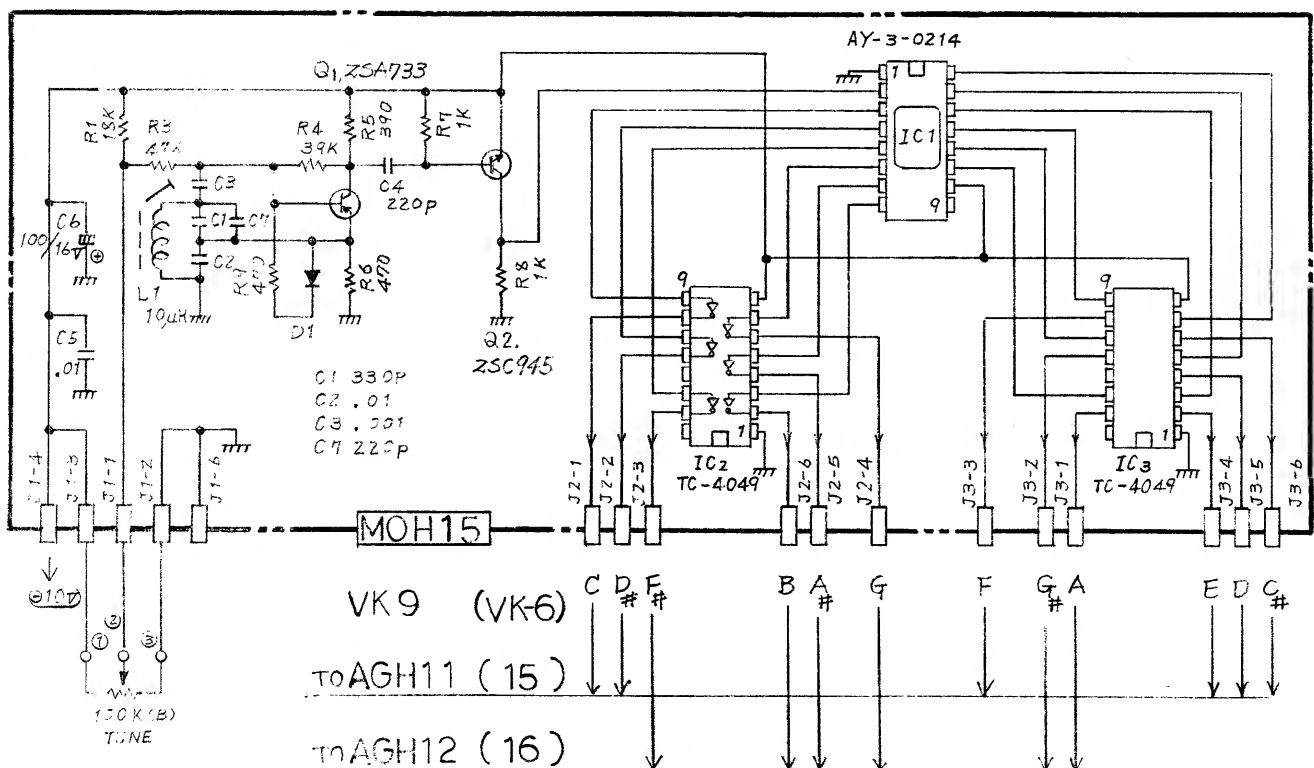
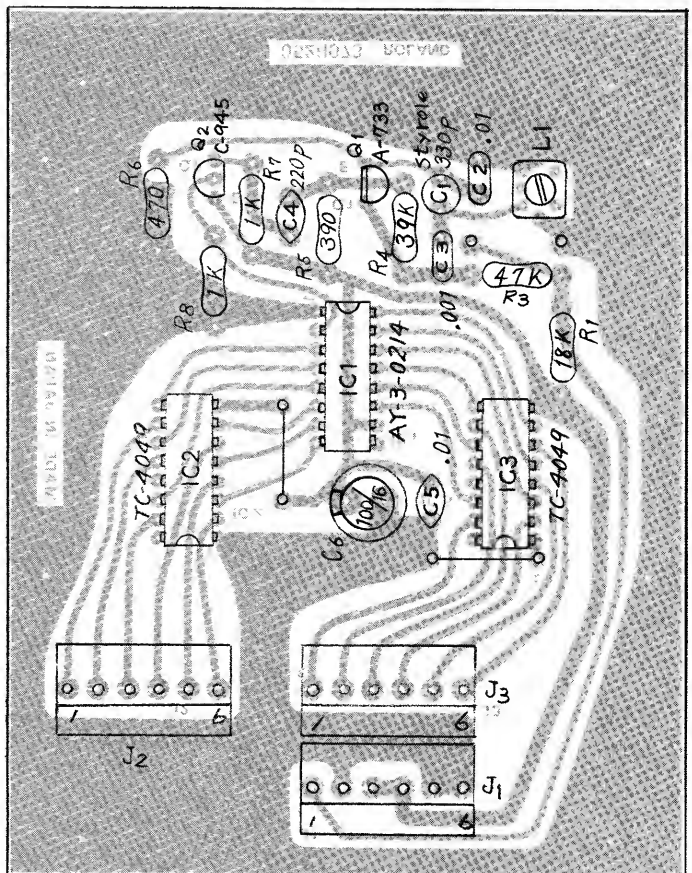
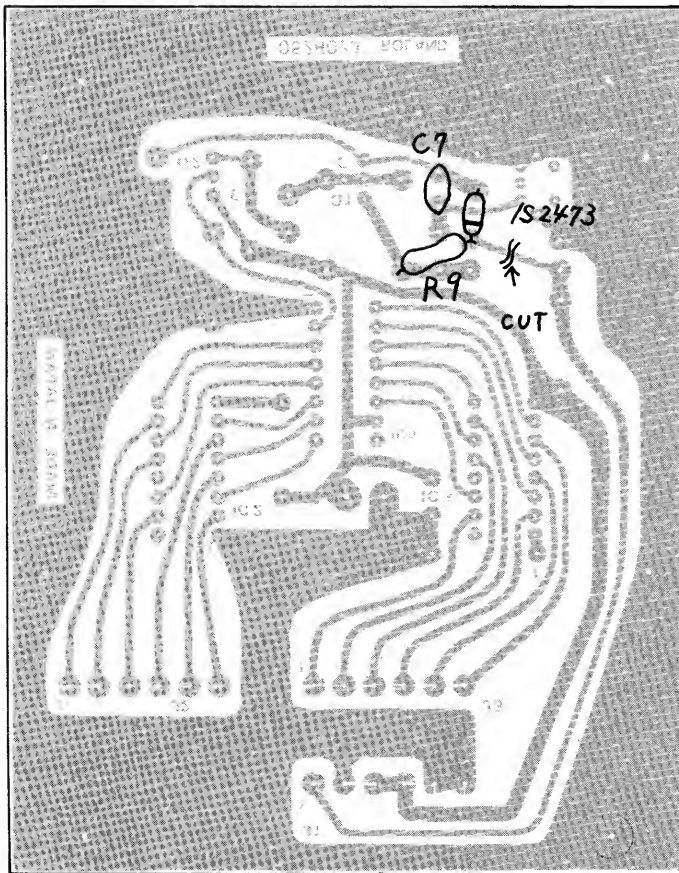
Note, however, that all IC's in the C group are not related with C keys. Only the IC's in the C group marked with screen are related with C keys. Other IC's in the group are activated by F and G' keys.

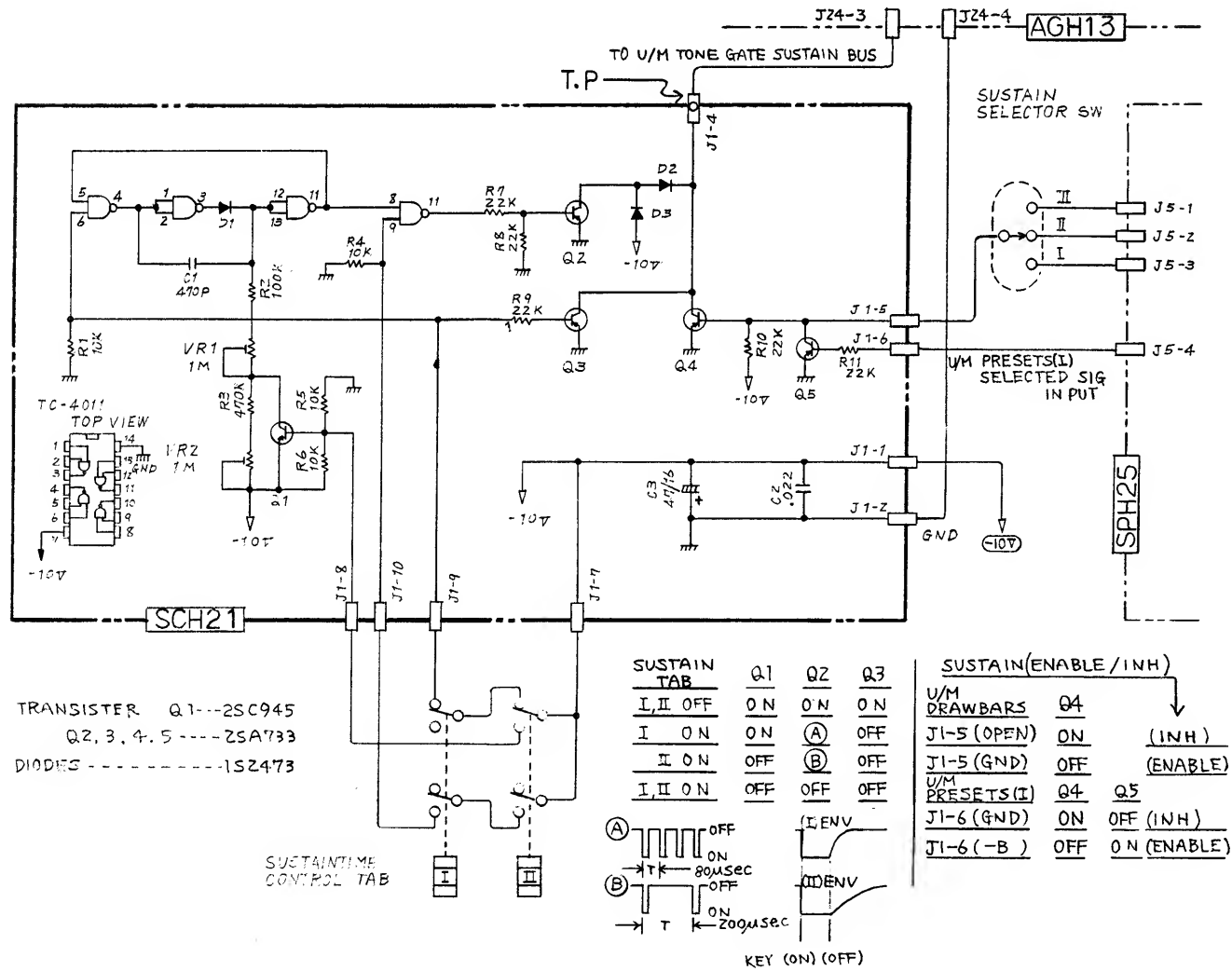
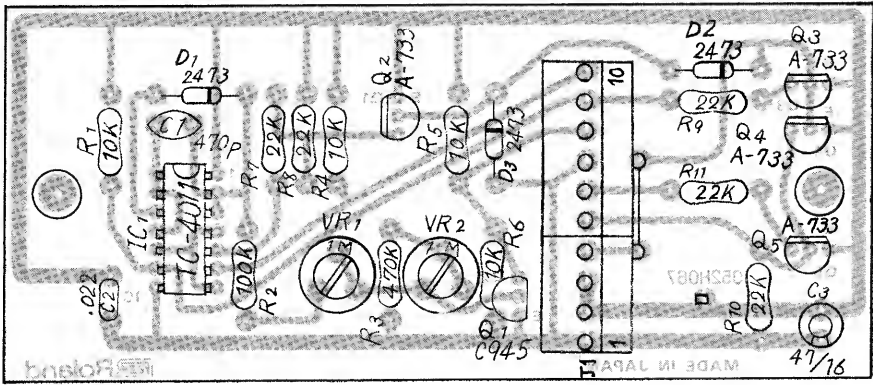
EXAMPLE: Locating Keyer IC of C Keys

As indicated by "to G Gate" below C1 column (44), the keyer IC's for 5-1/3f, 2-2/3f and 1-1/3f are located in the G group. Thus, the keying circuit for 5-1/3 for C1 key is found in the sixth IC from the bottom in the G group.

The keying IC for 6-2/5f of C1 is known to be located in the E group by indication of "to E Gate." The base of the keyer in question is the pin of BA643 at the uppermost position of the E group which is connected to the foil pattern extending from the C1 point.

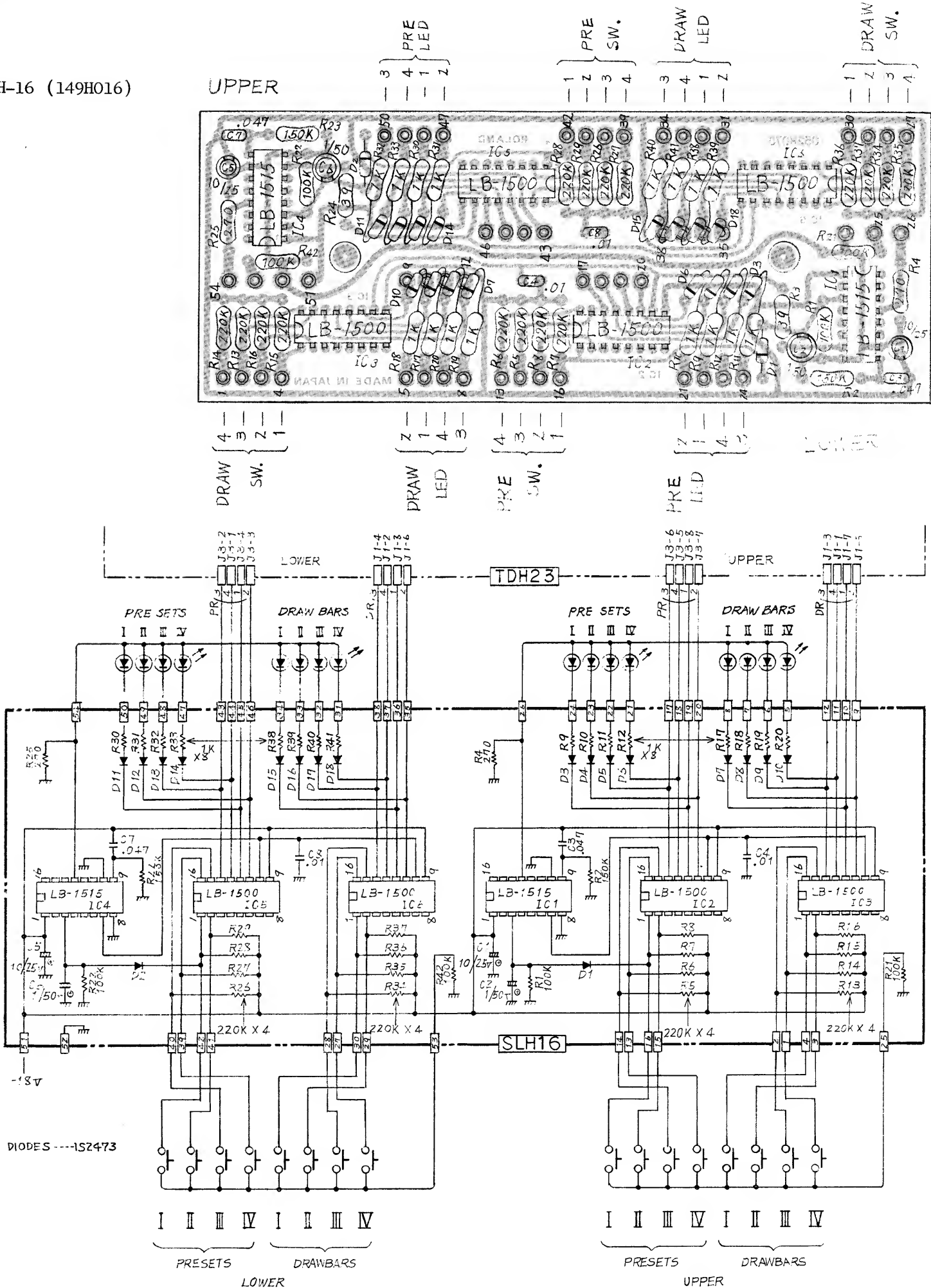
MASTER OSCILLATOR MOH-15 (149H015)





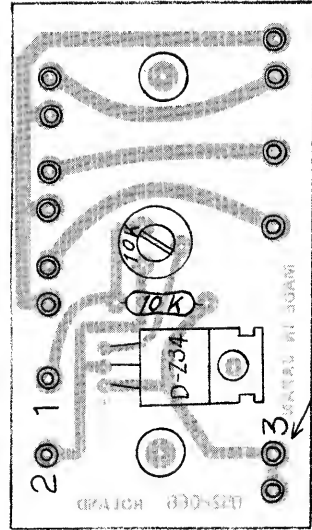
SELECTOR

SLH-16 (149H016)



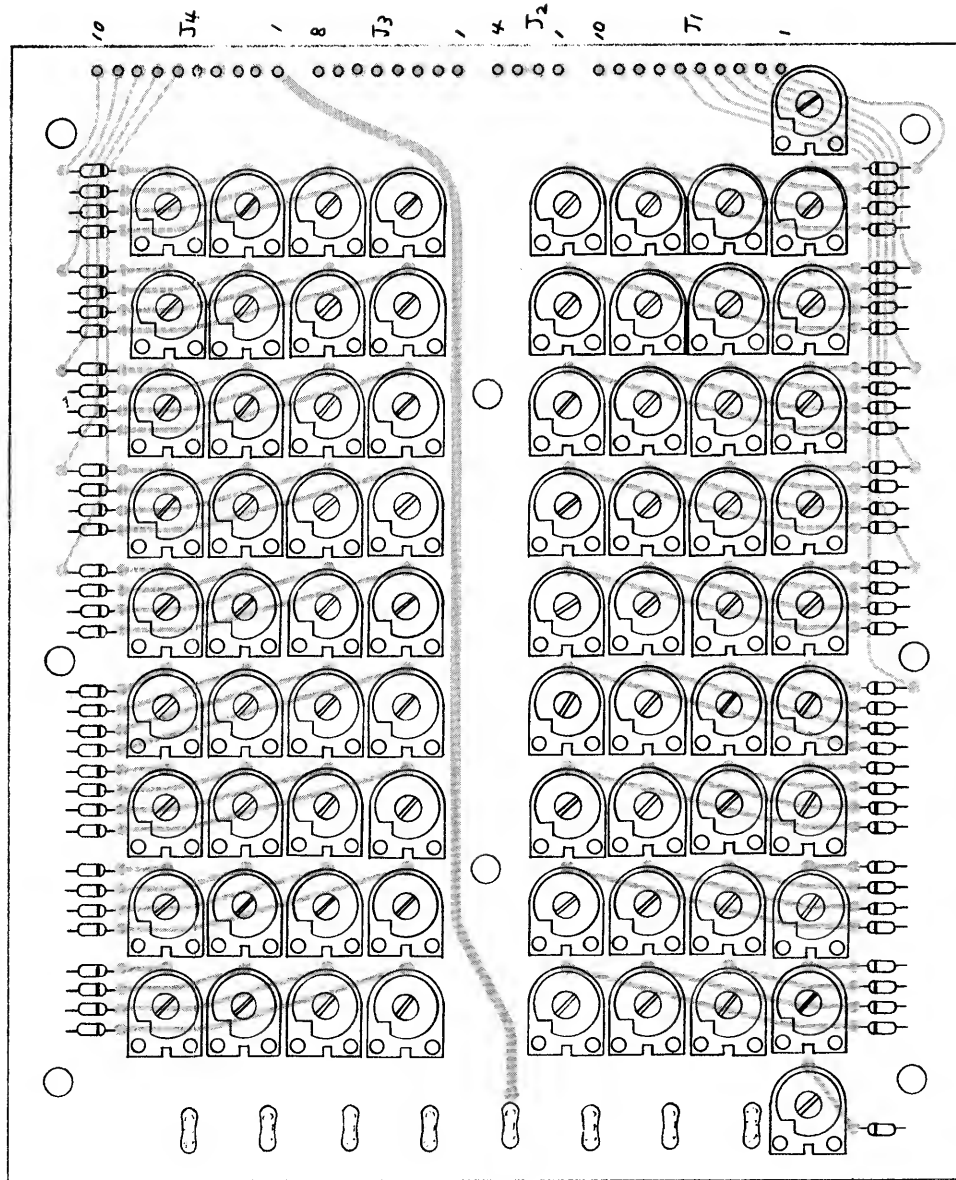
DRAWBAR POWER SUPPLY
DPH-17 (149H017)

GND -15V

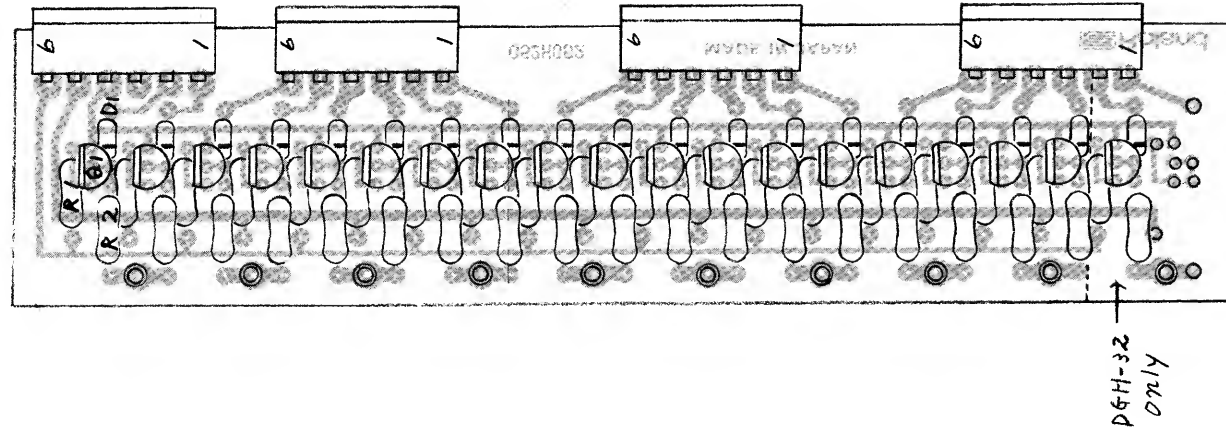


BIAS
VOLTAGE T.P

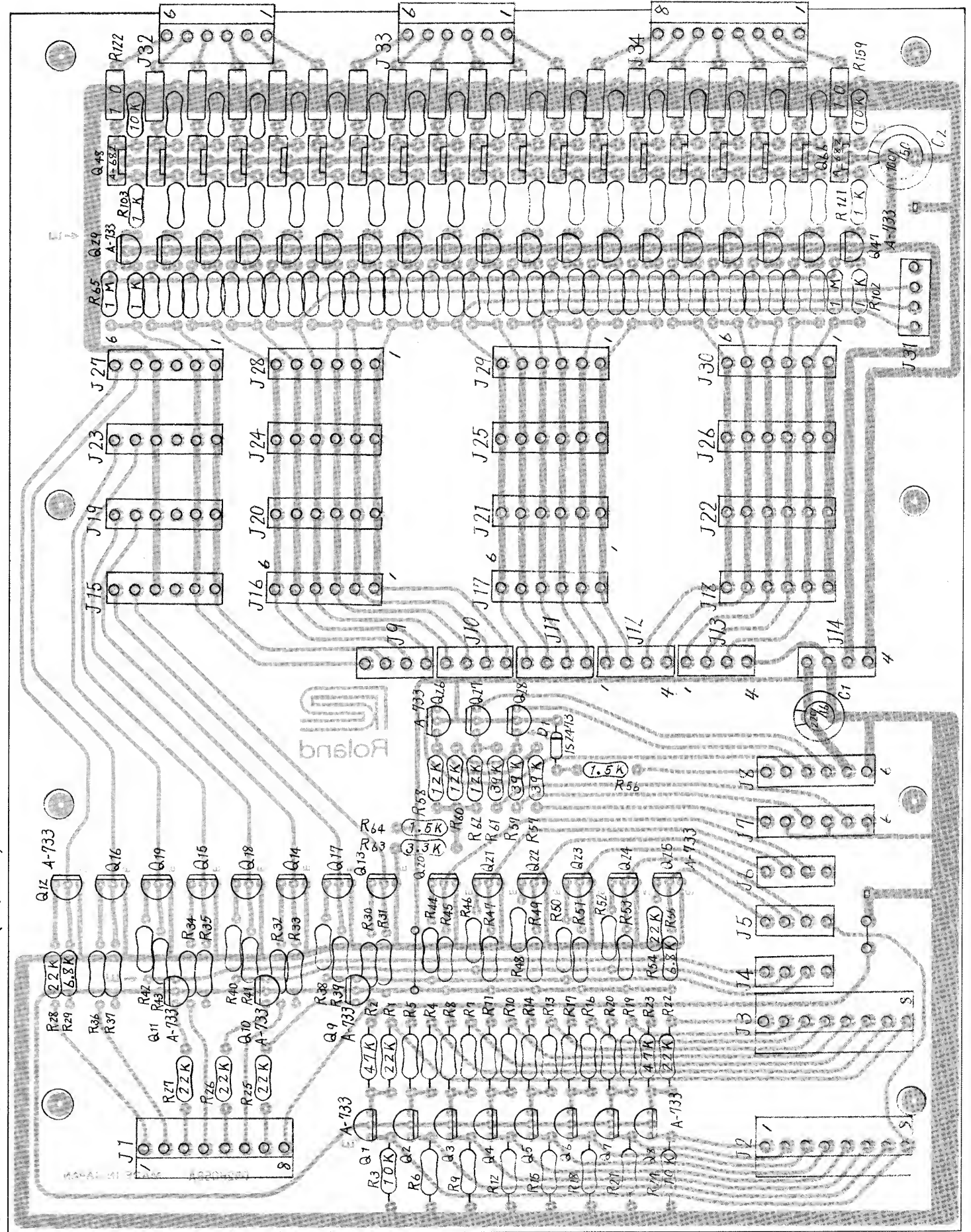
PRESET
PRH-22 (149H022)
VIEW FROM FOIL SIDE

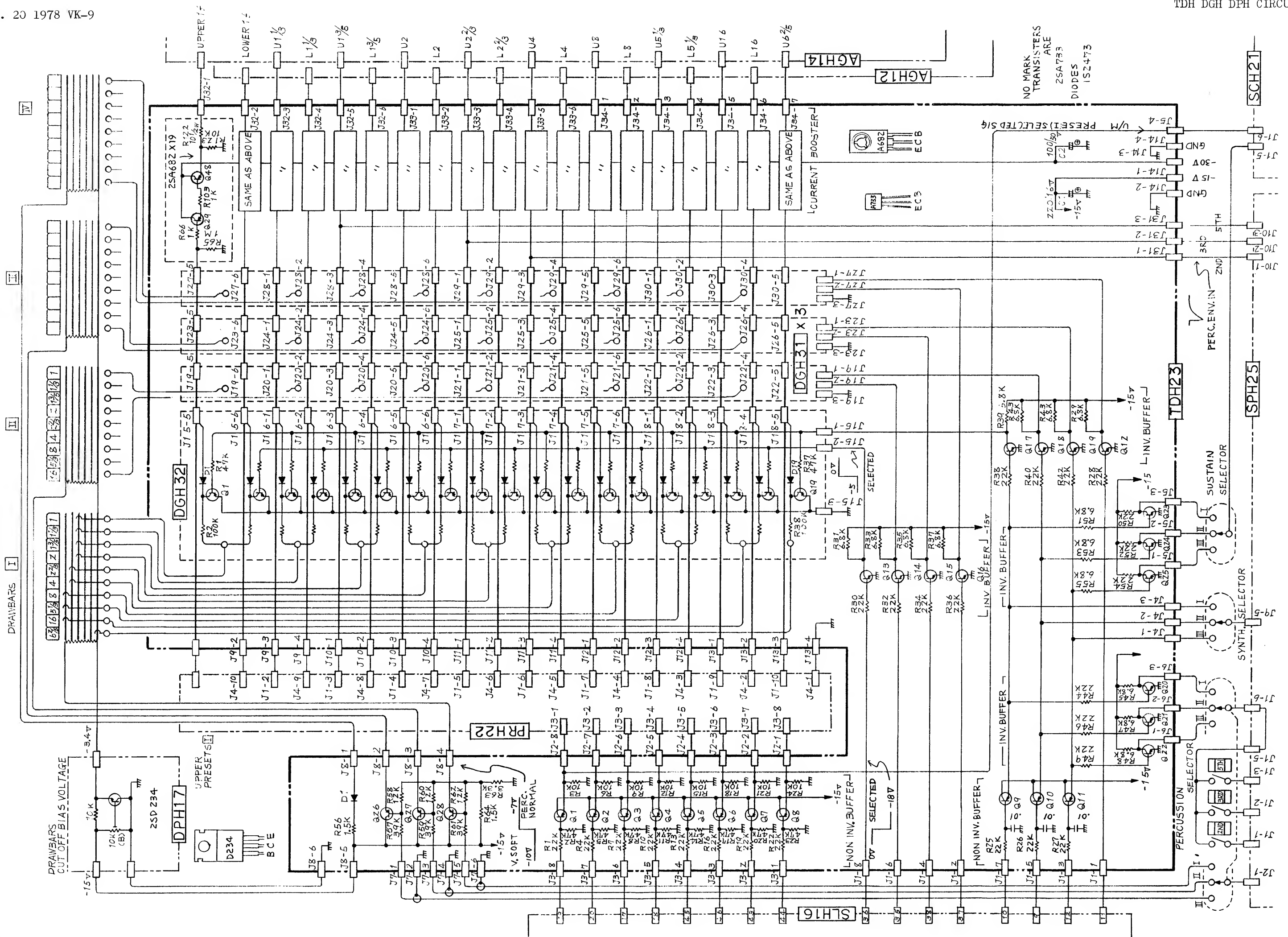


DRAWBAR GATE
DGH-31 (149H031)
DGH-32 (149H032)



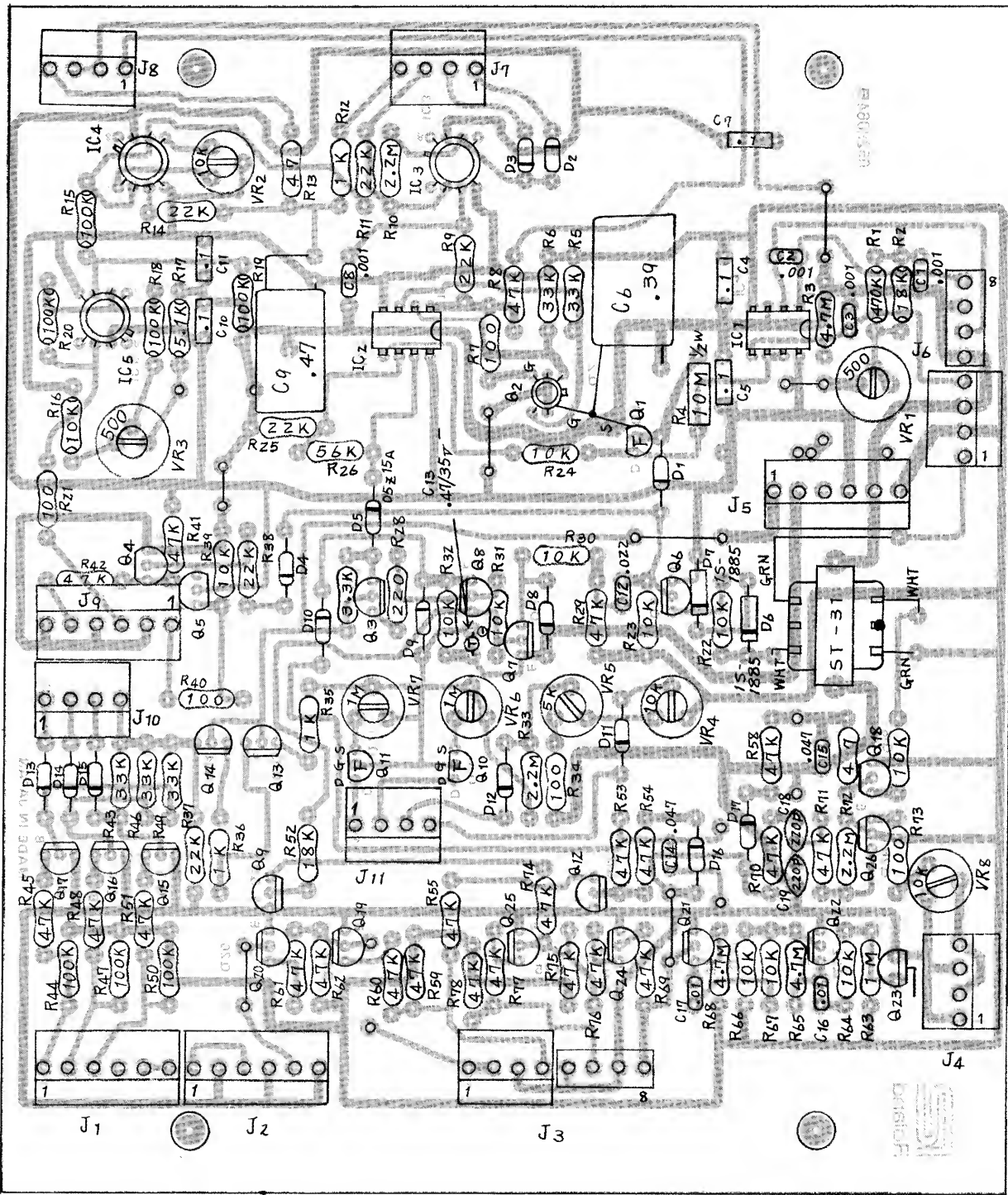
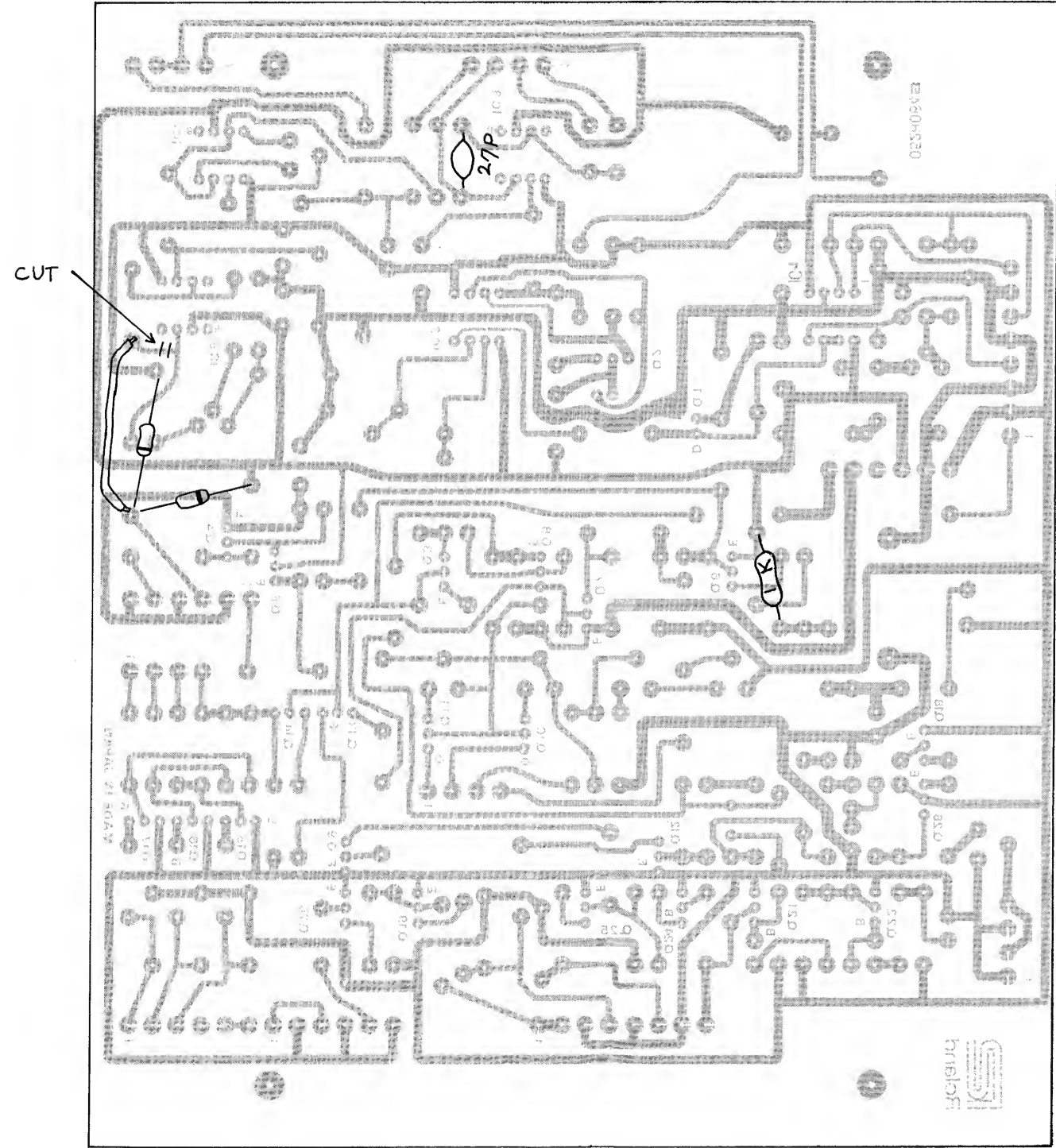
tone generator driver TDH-23 (149H023)

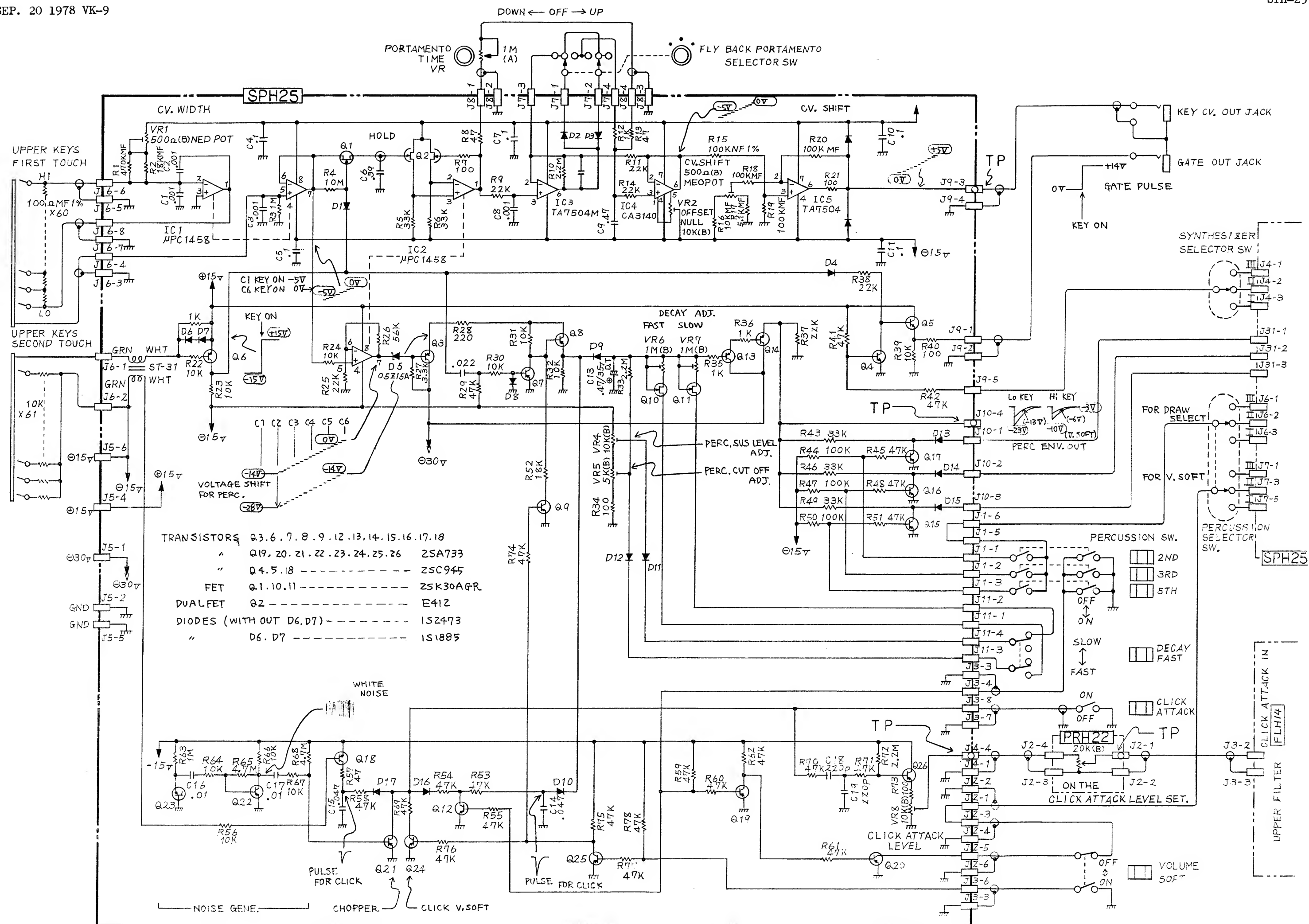


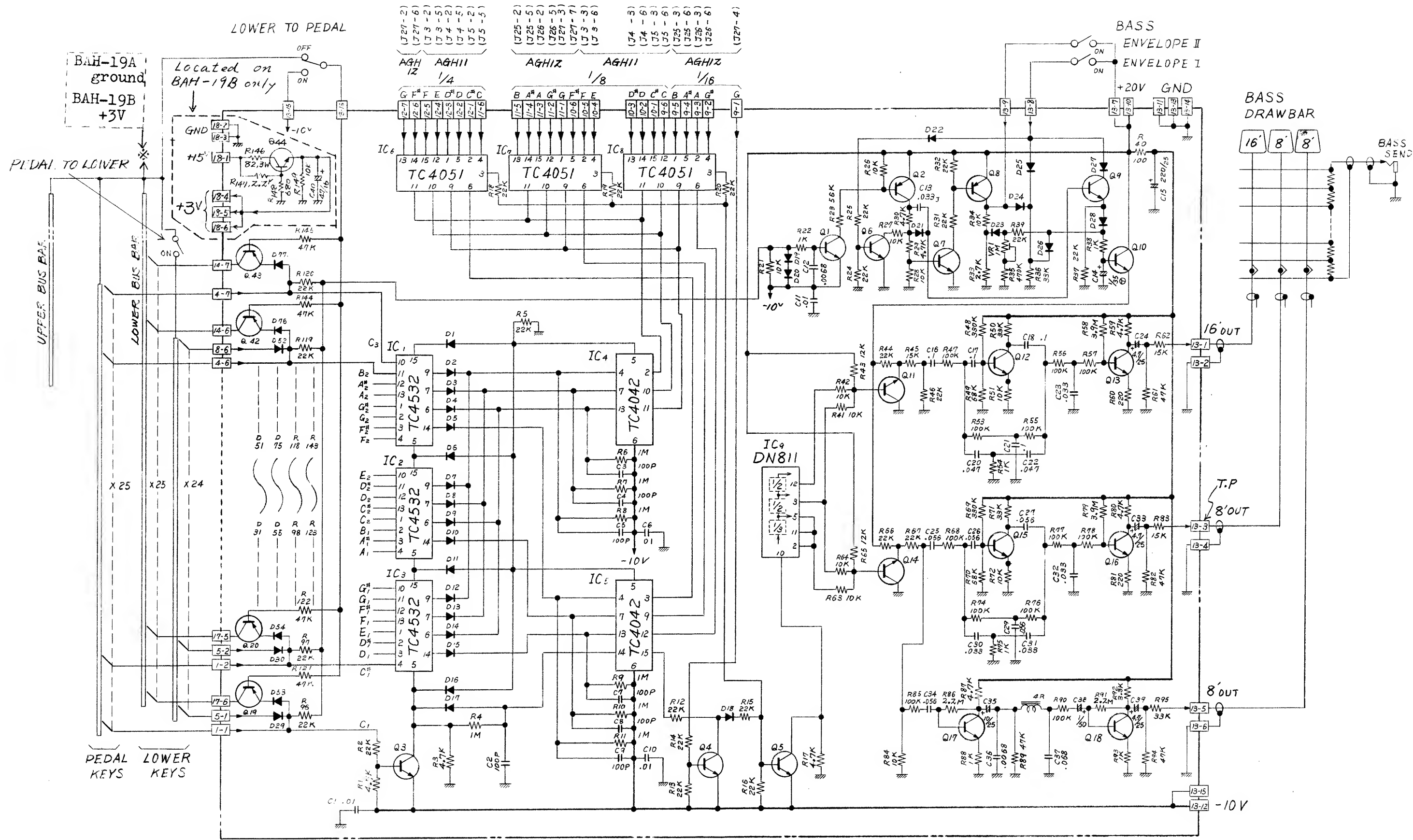


SYNTHESIZER PERCUSSION CONTROL SPH-25 (149H025)

PARTS ON THE FOIL SIDE

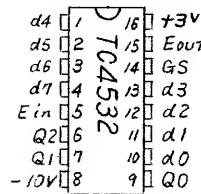




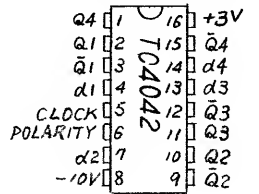


- Transistor ; 2SA-733 Q 2 8, 19~43
2SC-945 Q 1, 3, 4 5 6 7, 9 10, 11, 14
2SC-1222 Q 12, 13, 15, 16, 17, 18
2SD-526 Q 44

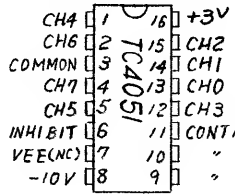
PRIORITY ENCODER



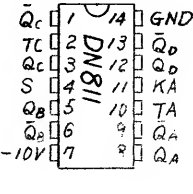
QUAD D. LATCH



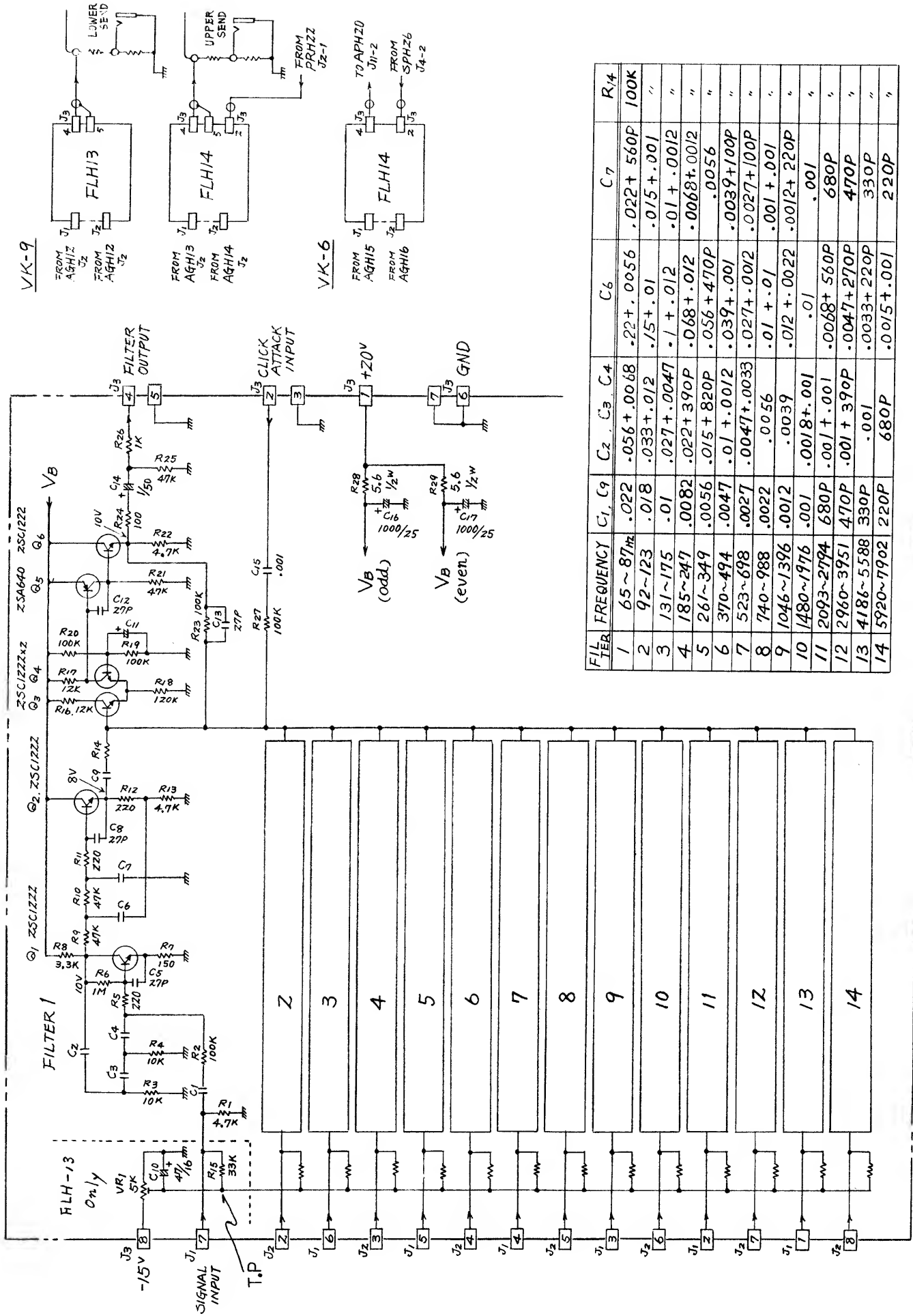
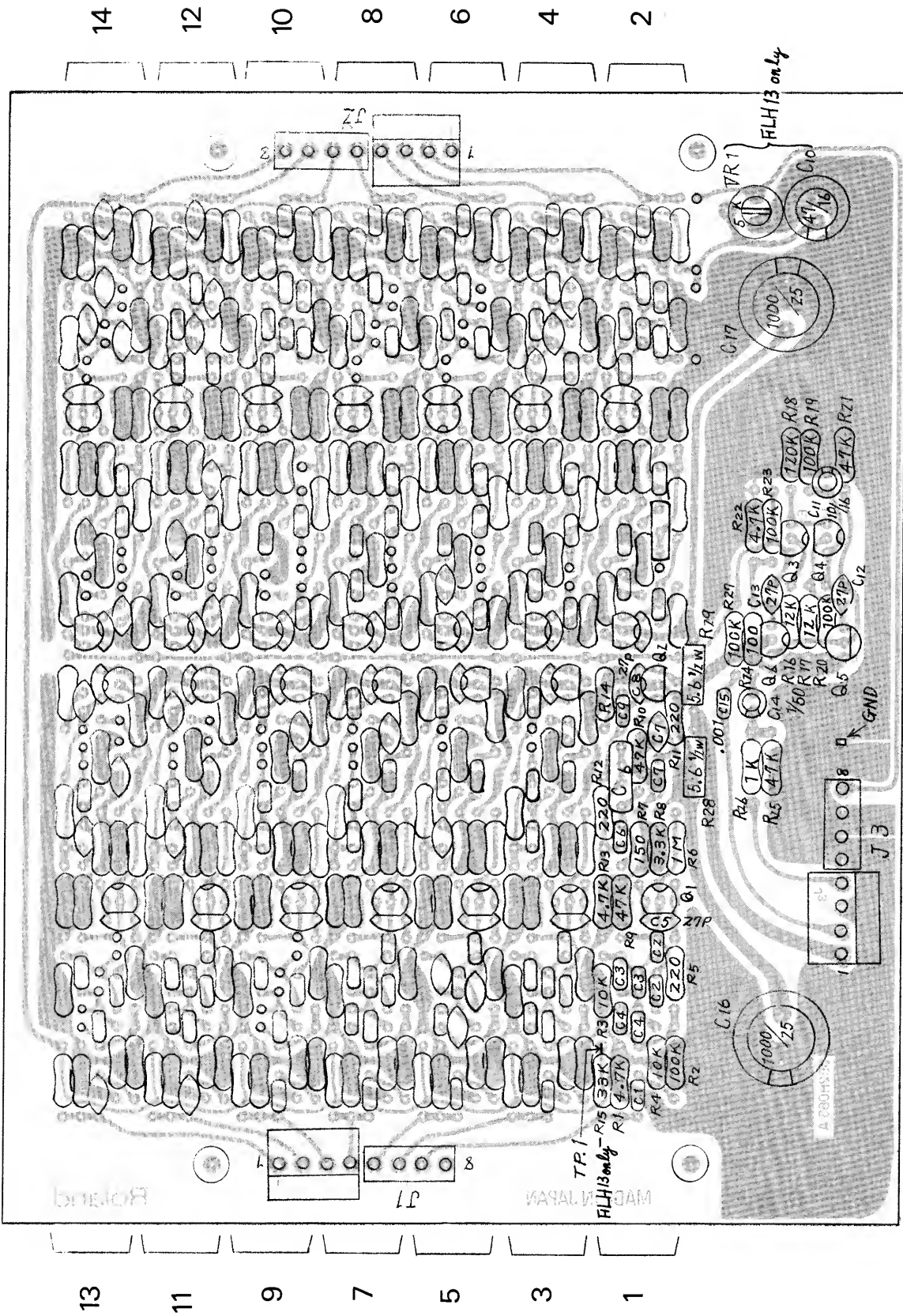
MULTIPLEXER



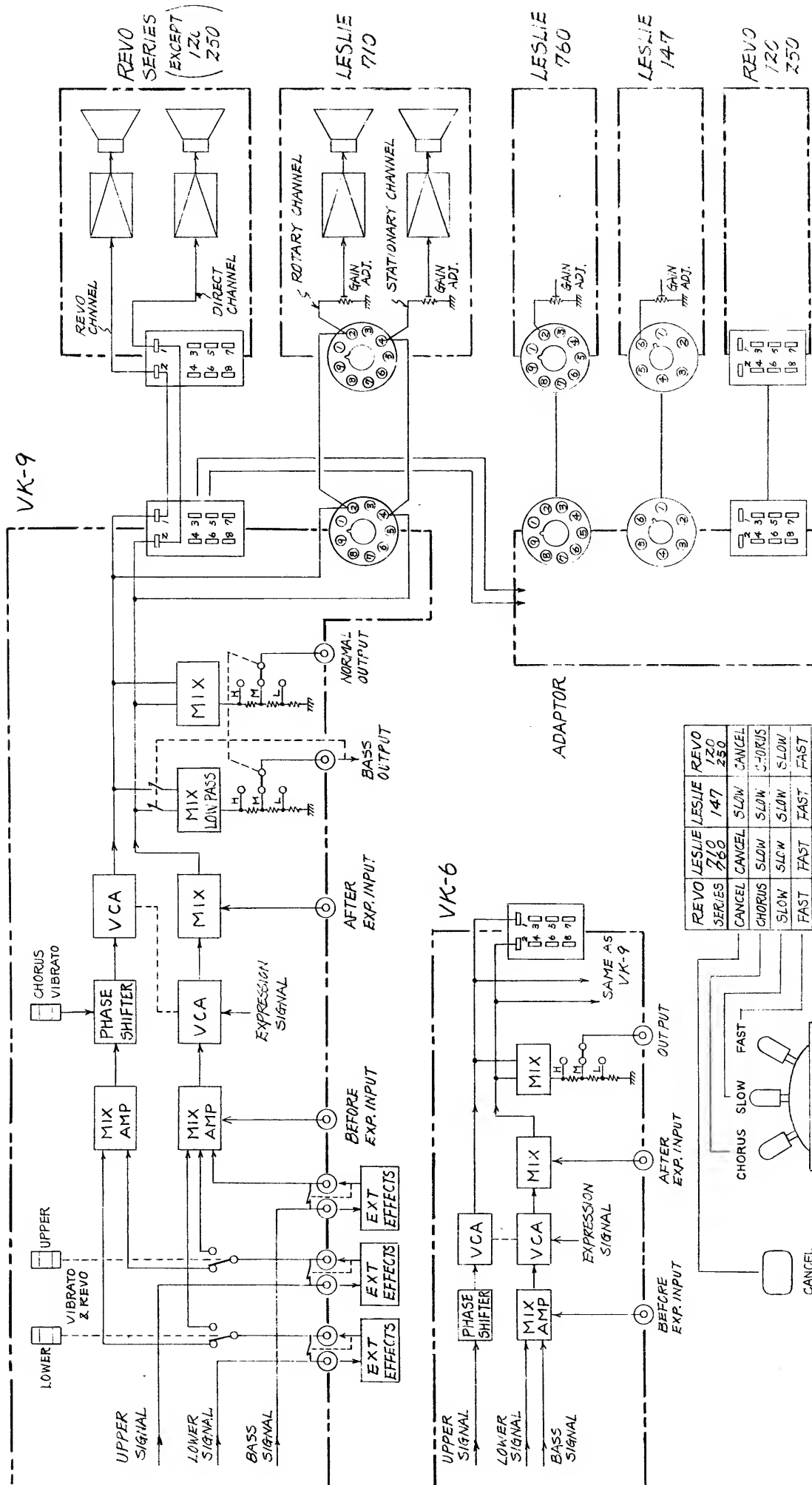
COUNTER



FILTER FLH-13 (145H013) FLH-14 (145H014)

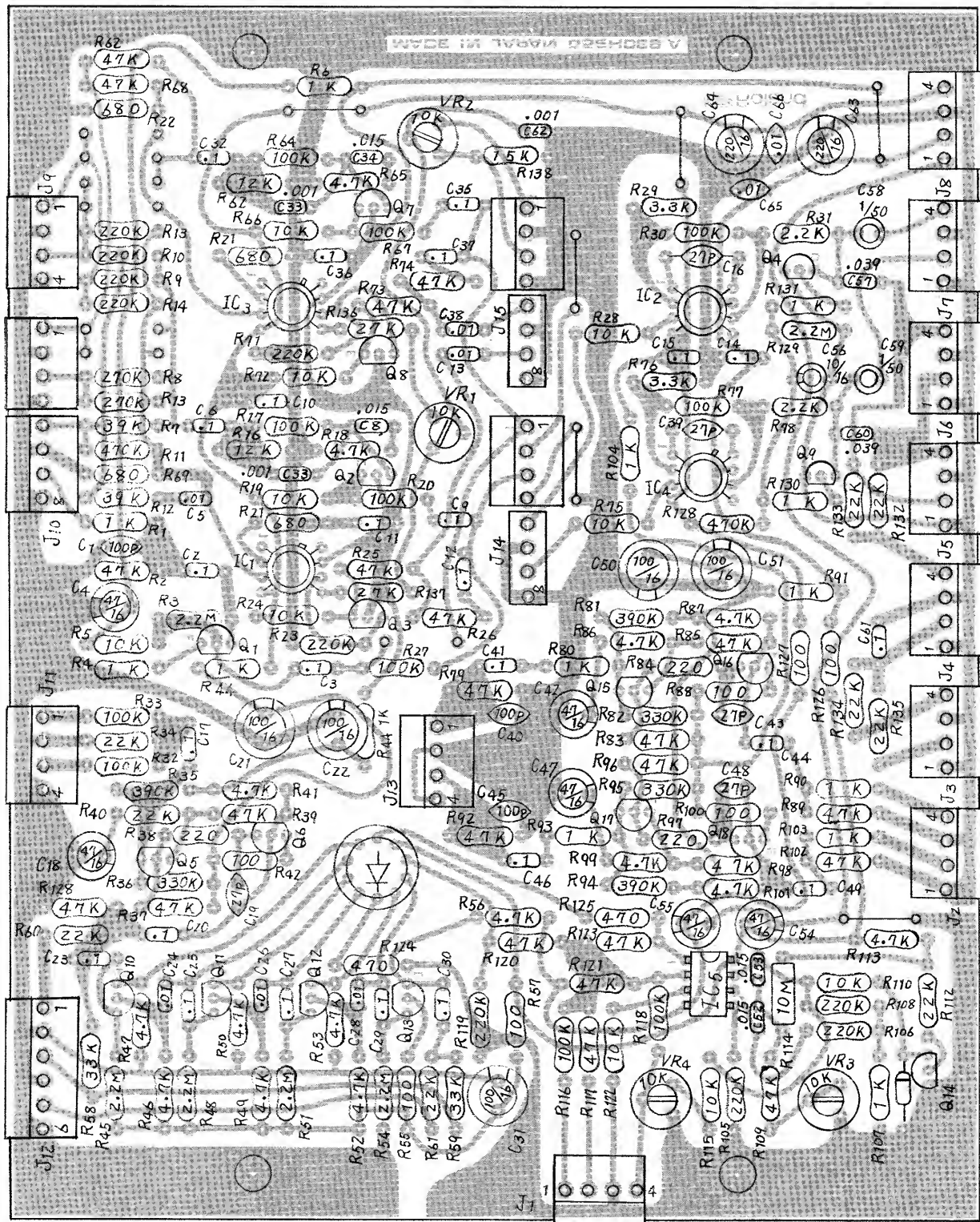


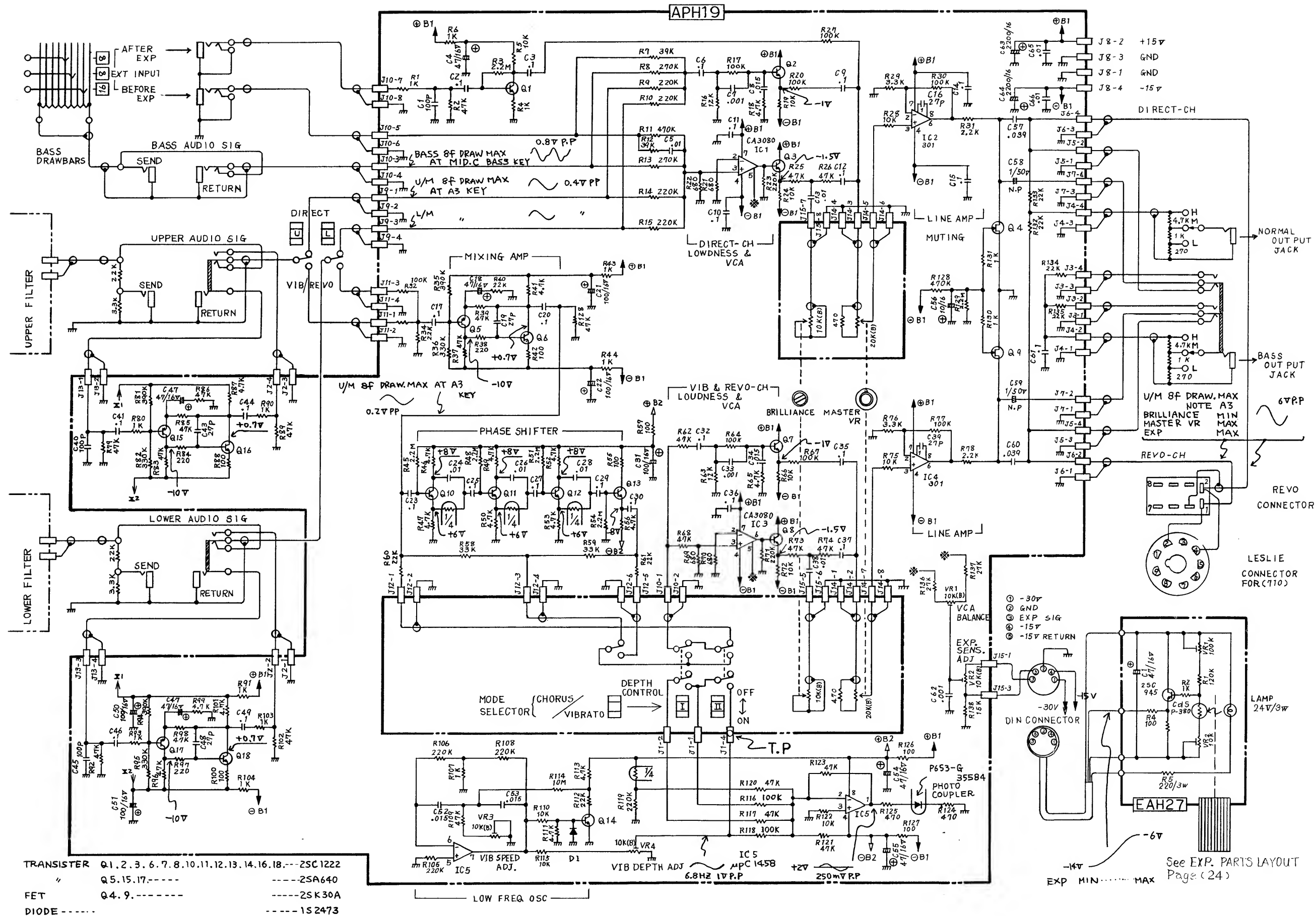
AUDIO SIGNAL FLOW CHART



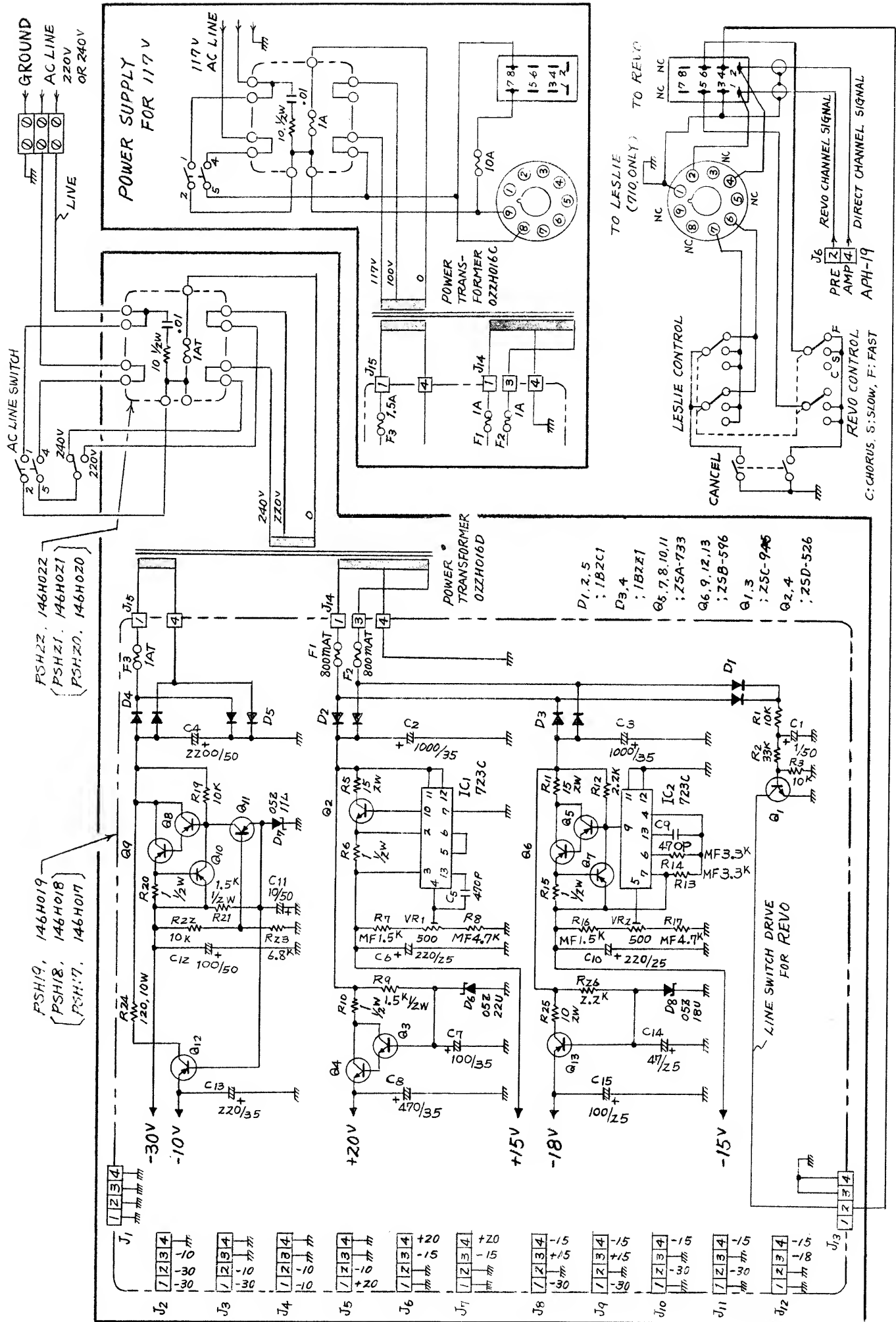
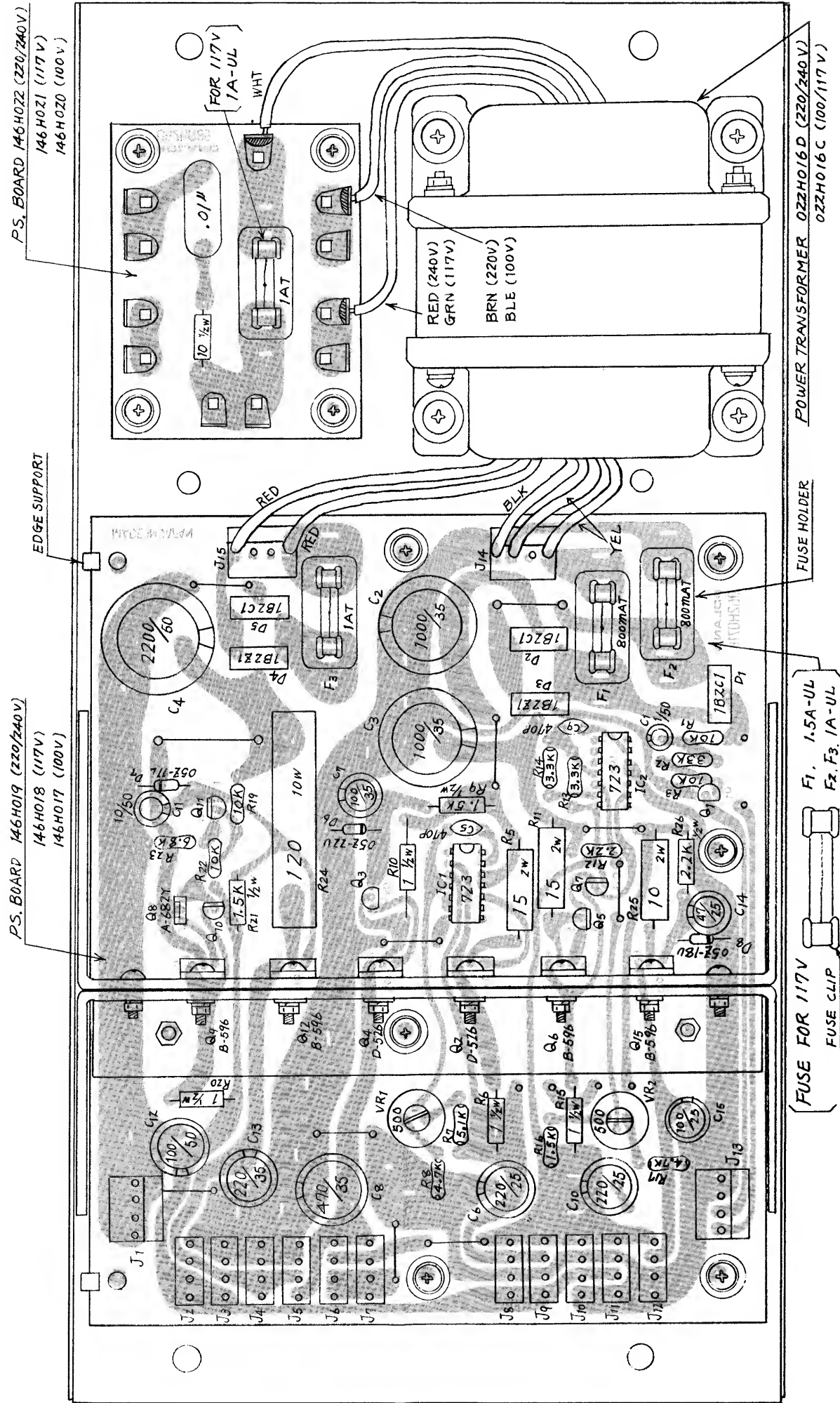
If the volume is insufficient when using Leslie speaker system, adjust GAIN ADJ of the Leslie system.

PREAMPLIFIER APH-19 (141H019)



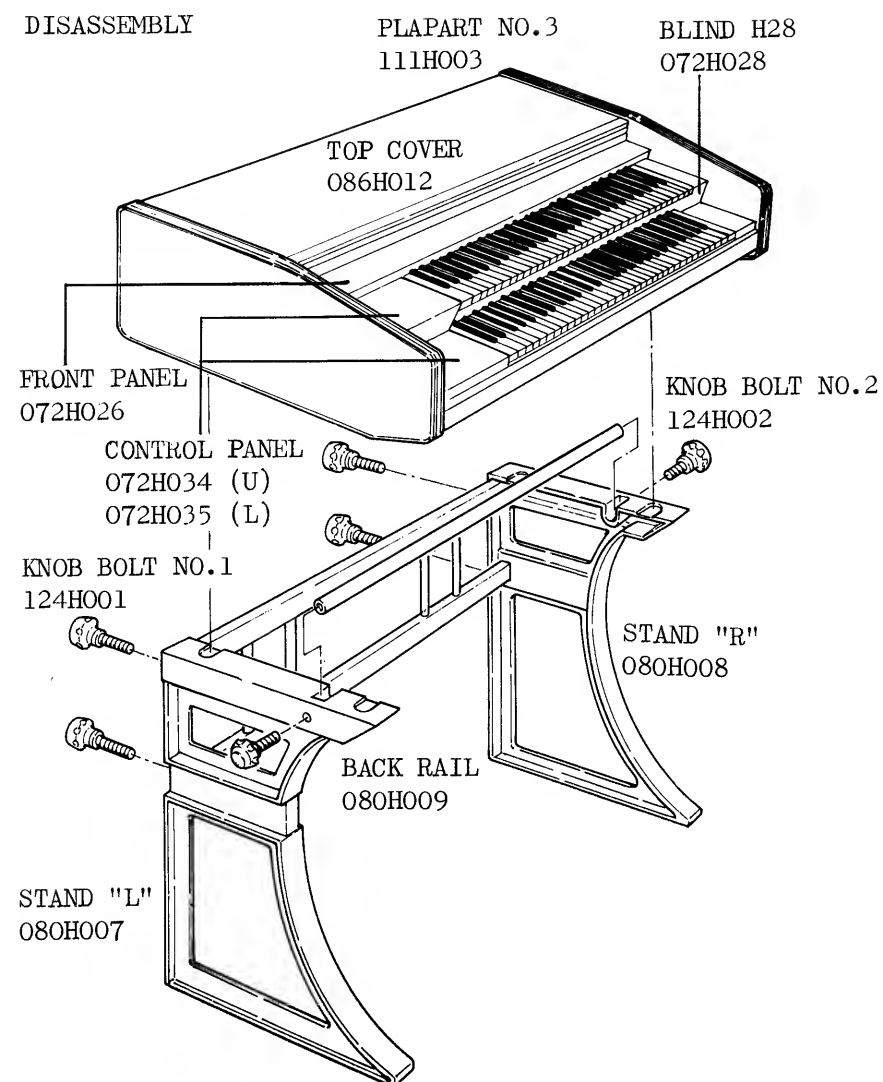


POWER SUPPLY



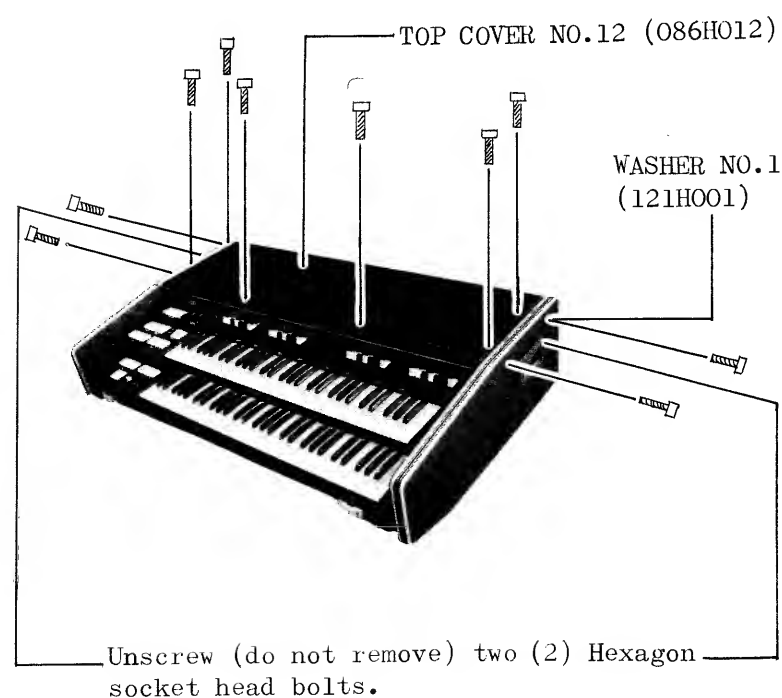
Note: For some 240V versions, AC is wired to Revolver/Leslie socket.

DISASSEMBLY



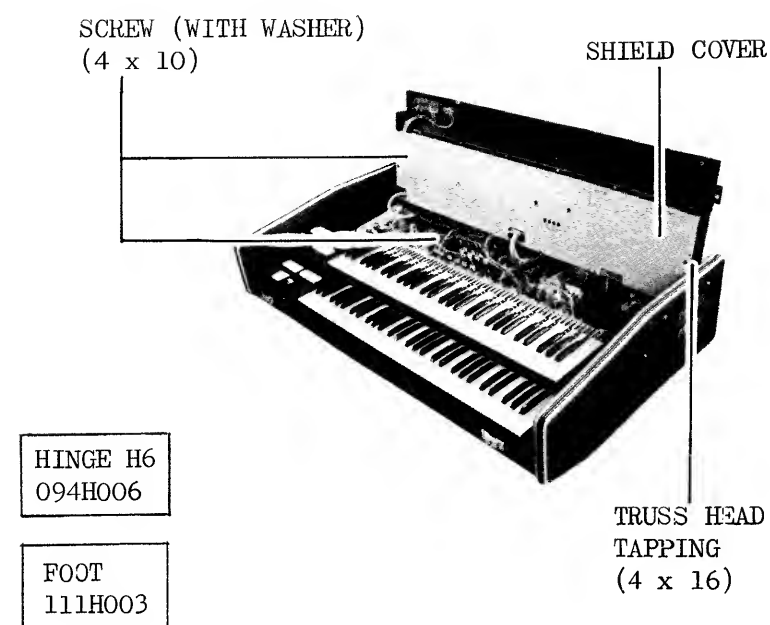
1. TO OPEN TOP COVER.

Remove ten (10) Hexagon socket head bolts.



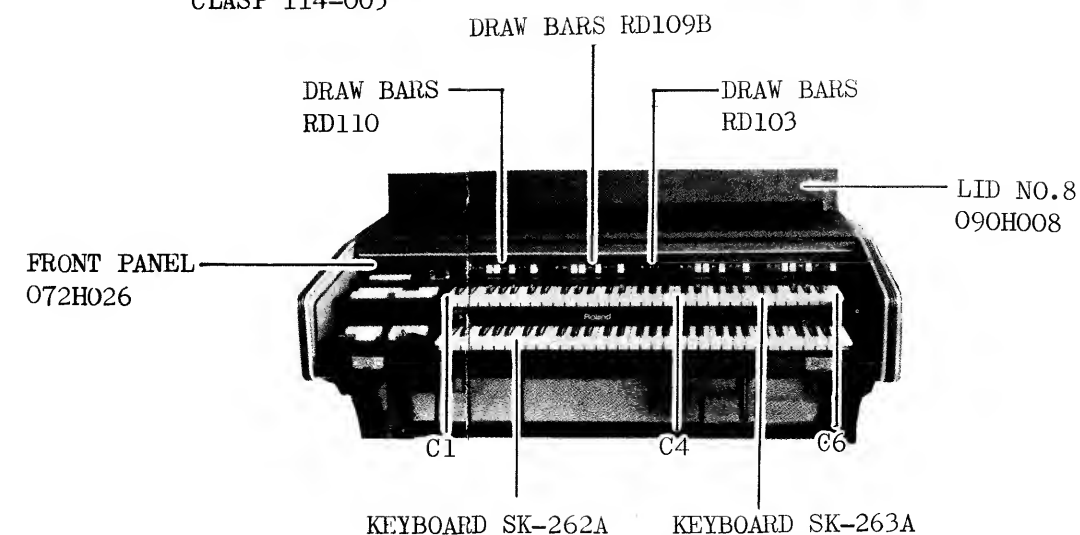
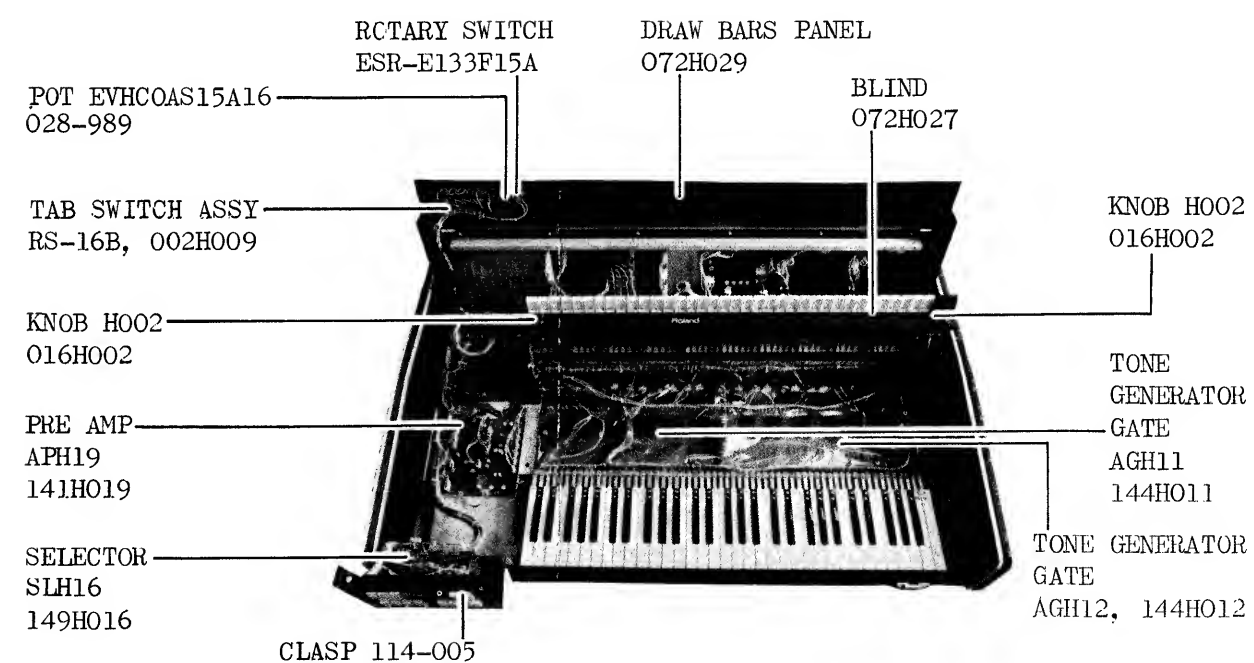
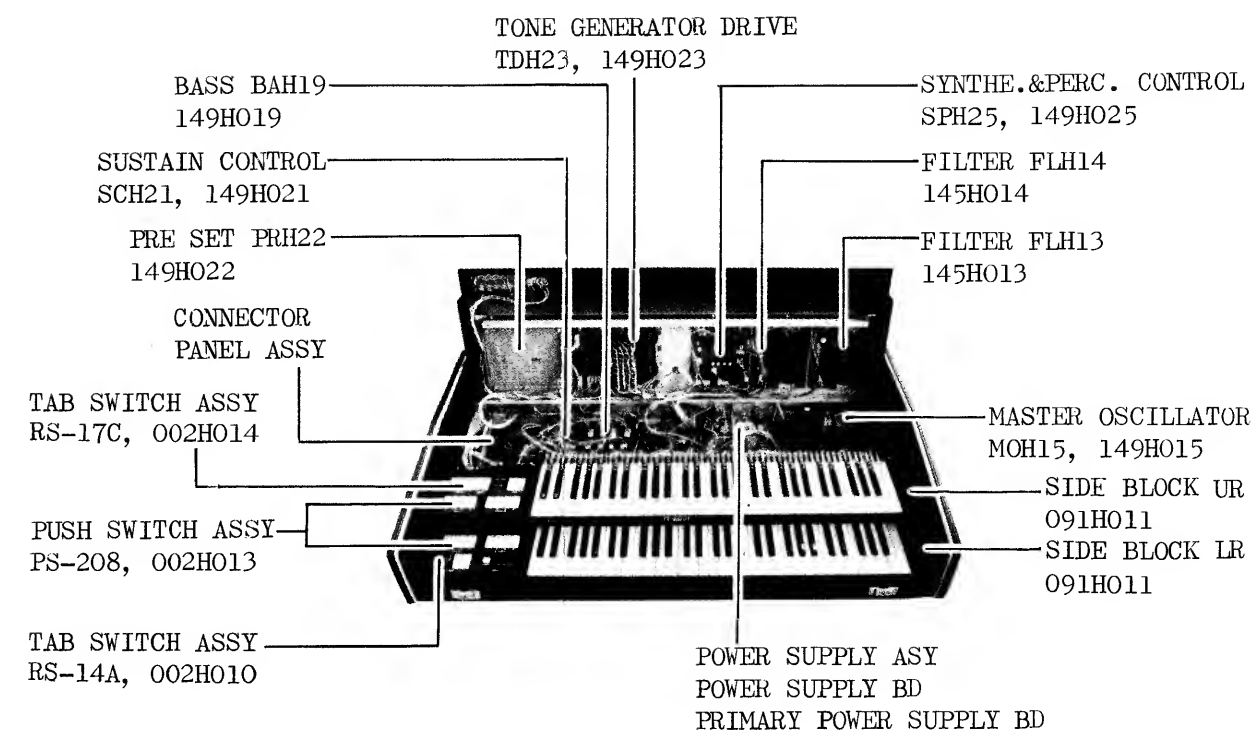
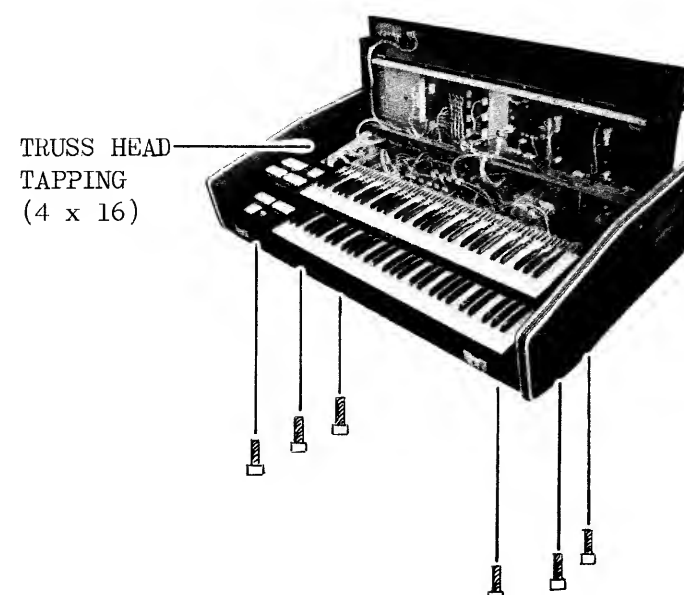
2. TO REMOVE SHIELD COVER.

Remove ten (10) screws (4 x 10 with washer) and two truss head tapping.

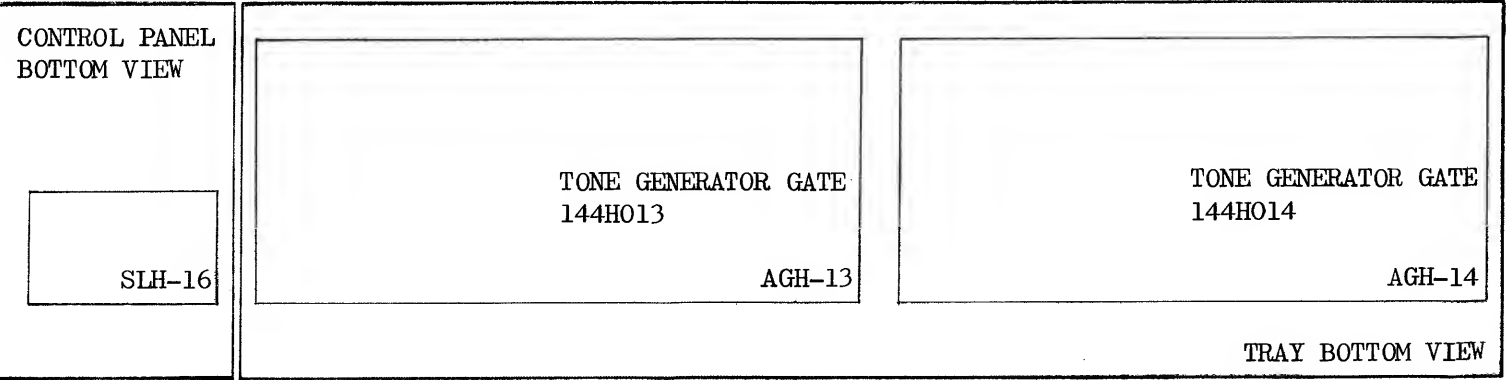
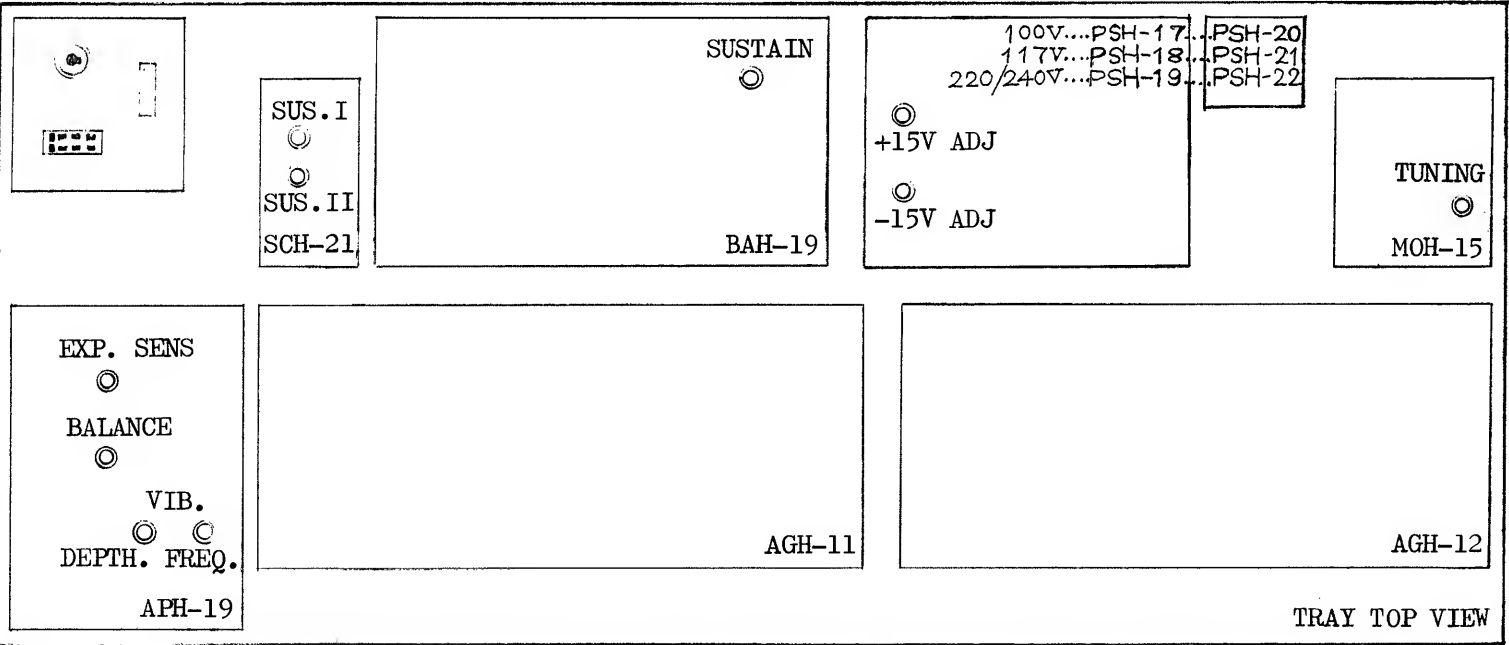
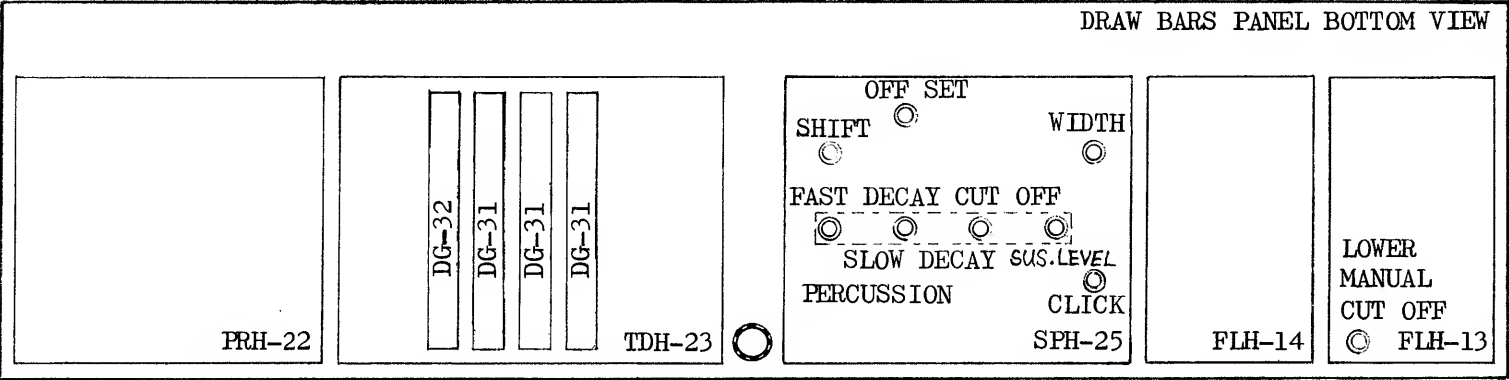
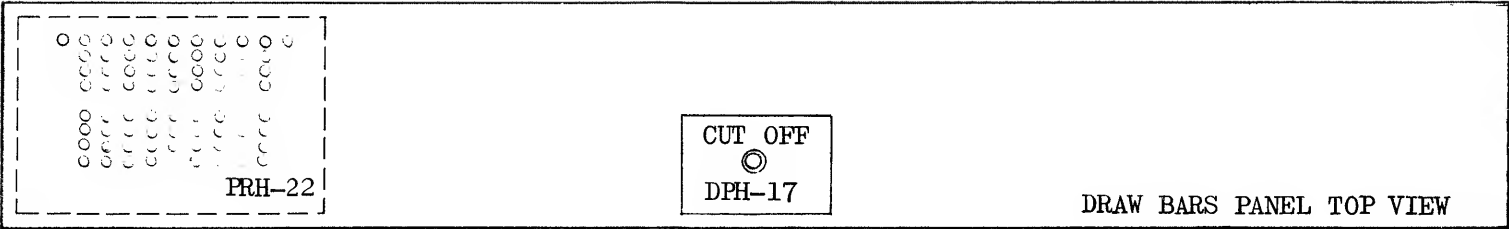


3. TO DISMOUNT UPPER MANUAL AND LOWER MANUAL.

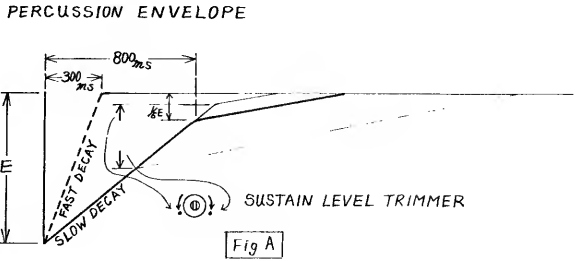
Remove six (6) Hexagon socket head bolts.
Remove one (1) Truss head tapping.



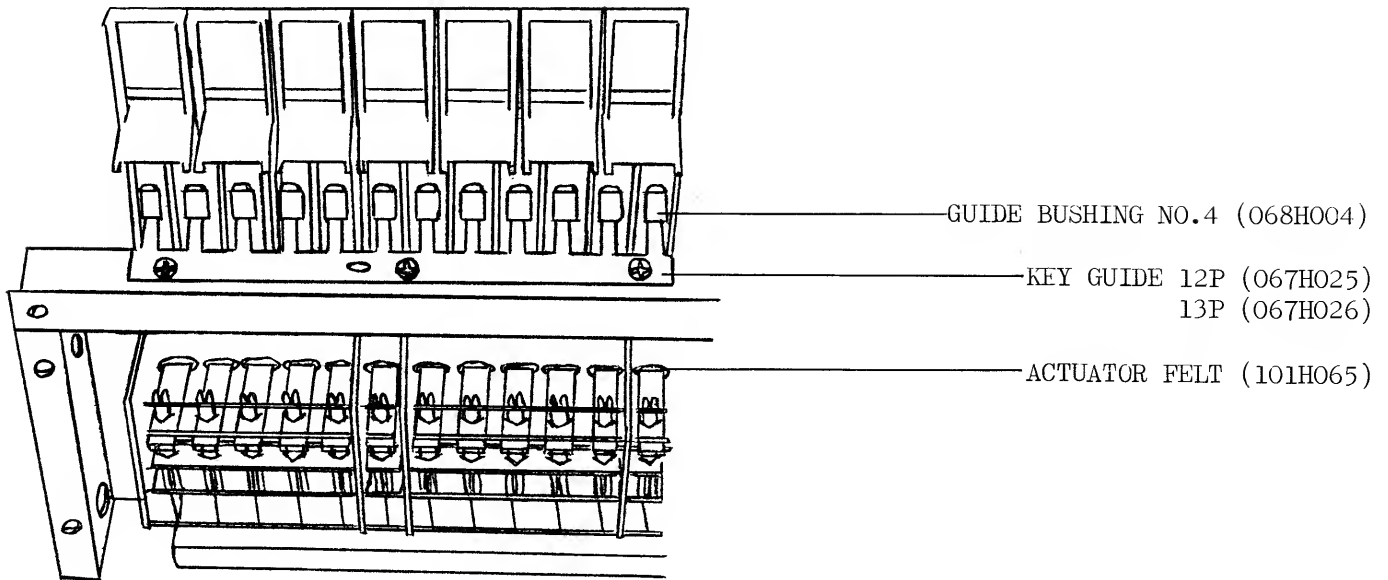
ELECTRICAL ADJUSTMENT



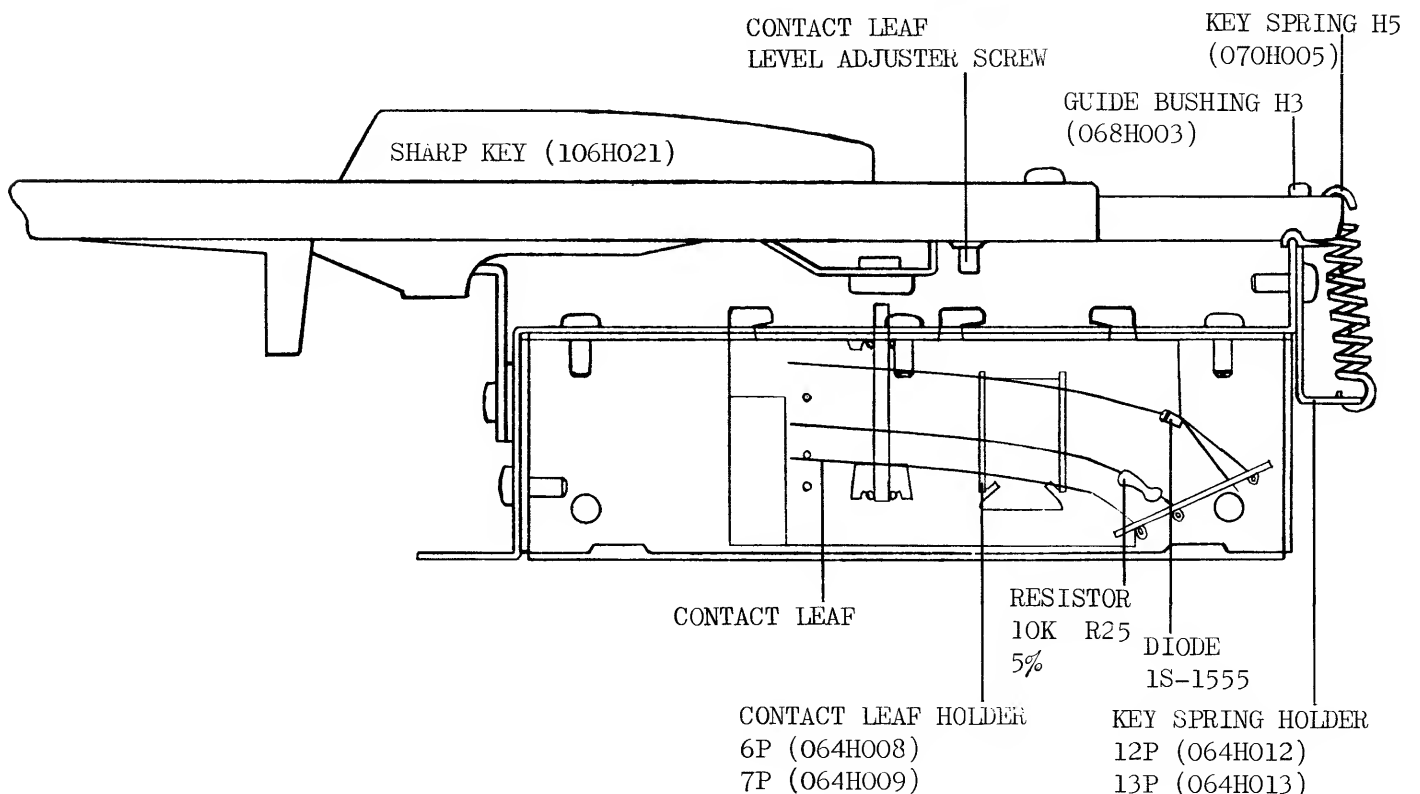
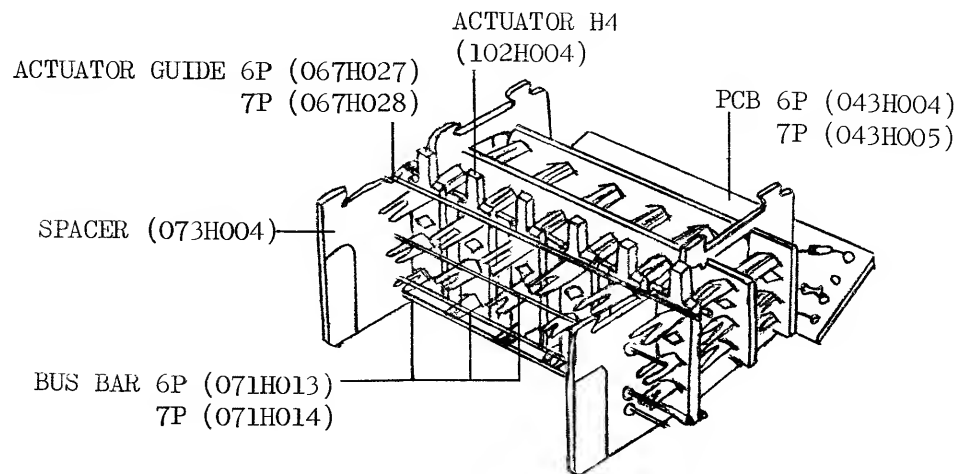
BOARD	ADJUSTMENT	POINT	SETTING	KEY PRESSED	SPEC.
DRAW BAR POWER SUPPLY	CUT OFF	3			
FILTER	CUT OFF	T.P.1			-7.0V
MASTER OSCILLATOR	TUNING		TUNE CONTROL at center, UP/DR 8'	U/M A3	442Hz
PRE AMP	EXP. SENS.				MAX
PRE AMP	REVO CH-DIRECT CH VCA BALANCE	J4-4	UP/DR8' MAX, UP TAB(REVO&VIB) ON/OFF	U/M C3	Adjust for equal levels. REVO CH-DIRECT CH
PRE AMP	VIB.DEPTH	J1-4			1V P-P
PRE AMP	VIB.SPEED	J1-4			6.8Hz
BASS	BASS SUSTAIN TIME	J13-3		ANY KEY	1.2sec
SUSTAIN CONTROL	U/M SUSTAIN I	J1-4	PRE SET I SUSTAIN I	ANY U/M KEY	SHORT
SUSTAIN CONTROL	U/M SUSTAIN II	J1-4	PRE SET I SUSTAIN II	ANY U/M KEY	LONG
SYNTH. PERCUSSION CONTROL	OFF SET	J9-3	SYNTH.	U/M KEY C4	Constant voltage with Flyback - up-off-down.
SYNTH. PERCUSSION CONTROL	SHIFT	J9-3	SYNTH.	U/M KEY C6	5V (+1mV)
SYNTH. PERCUSSION CONTROL	WIDTH	J9-3	SYNTH.	U/M KEY C1	0V (+1mV)
SYNTH. PERCUSSION CONTROL	CUT OFF	J10-4	PERC. 2ND, UP. DRAW BARS TAB, (UP DRAW BARS ALL OFF)	U/M KEY C2	C2 is about to sound.
SYNTH. PERCUSSION CONTROL	FAST DECAY TIME	J10-4	The above plus DECAY FAST - on.	U/M KEY C2	300ms
SYNTH. PERCUSSION CONTROL	SLOW DECAY TIME	J10-4	The above plus DECAY FAST - off.	U/M KEY C2	800ms
SYNTH. PERCUSSION CONTROL	SUSTAIN LEVEL	J10-4		U/M KEY C2	1/6E See Fig. A
PRE SET	CLICK ATTACK LEVEL	J4-4	CLICK ATTACK, BRILLIANCE POT-ENTIOMETER at minimum.	ANY U/M KEY	LOUD
PRE SET	CLICK ATTACK LEVEL	J2-1	CLICK ATTACK, BRILLIANCE POT-ENTIOMETER at minimum.	ANY U/M KEY	LOUD



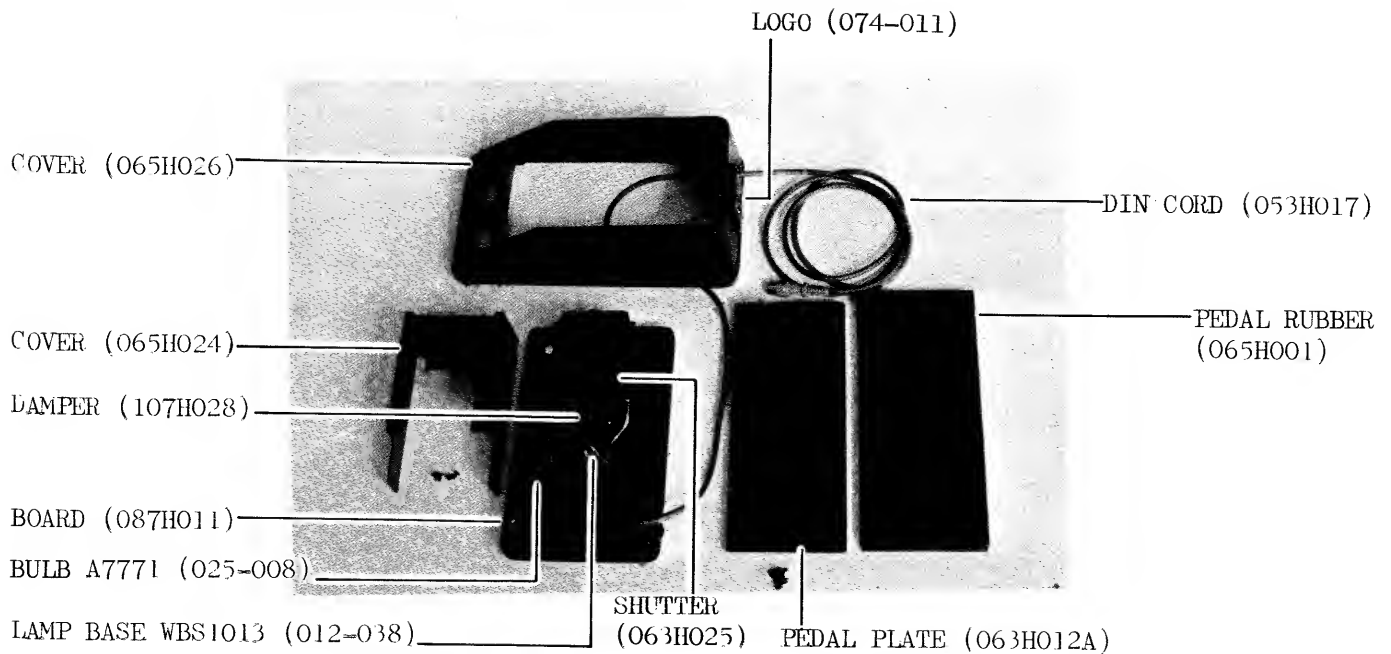
KEYBOARD PARTS



NATURAL KEY	
F	106H016
G	106H017
A	106H018
B	106H019
C	106H013
D	106H014
E	106H015
C'	106H020

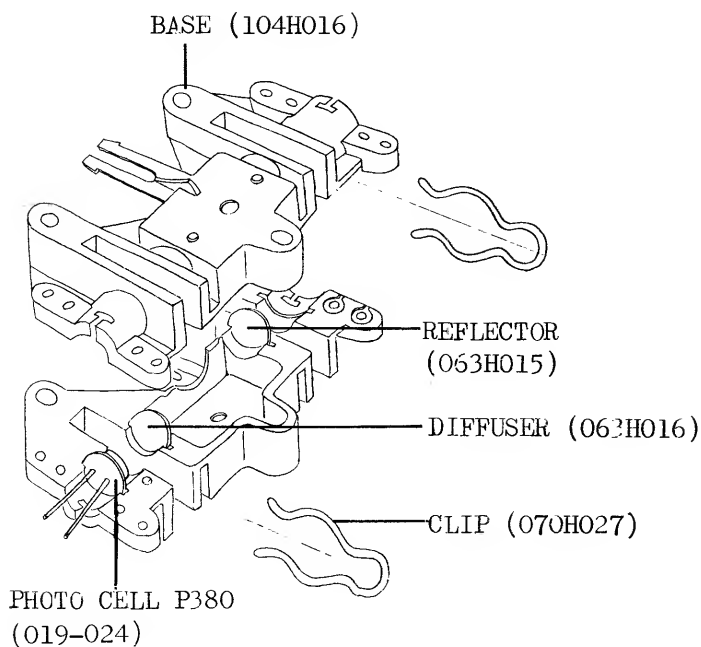
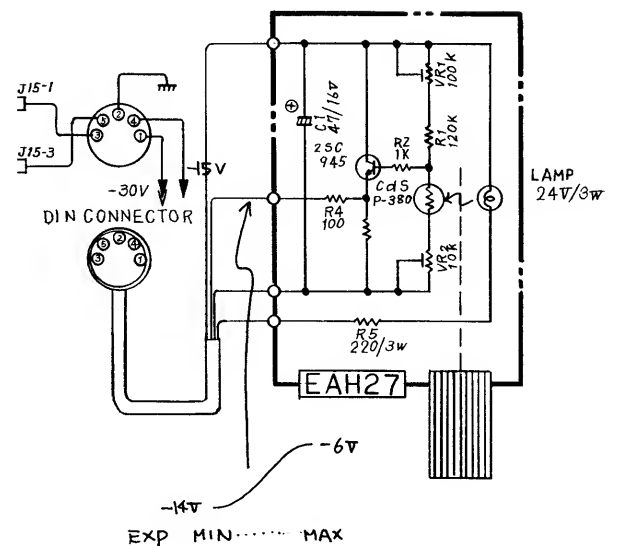
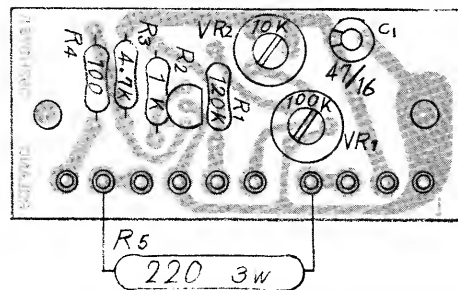


EXPRESSION PEDAL VKE-1

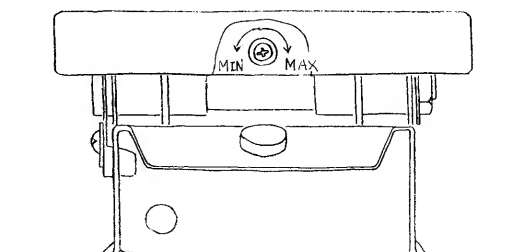


*SPARE BULB SERIAL NO. 690182 (VKE-1) AND SUBSEQUENT.
680174 (VKE-9)

PCB EAH-27 (149H027)



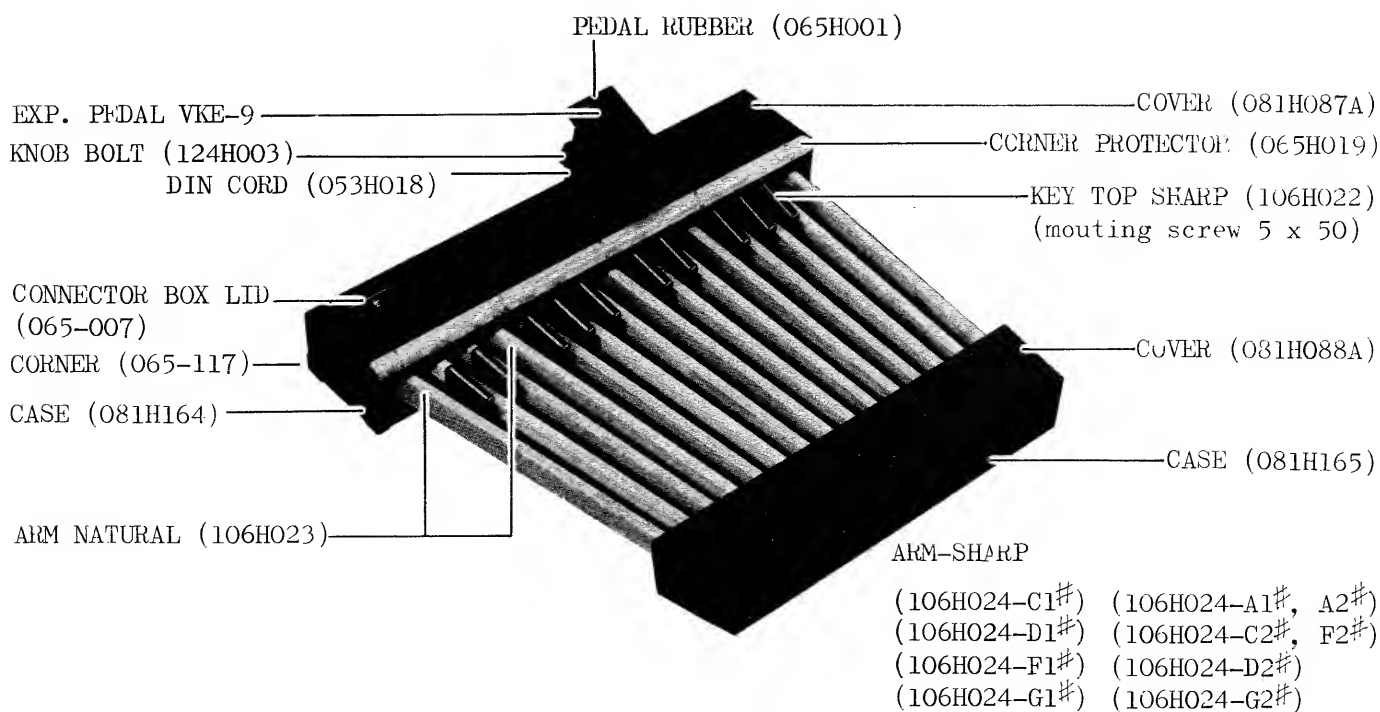
BRAKE ADJUSTOR SCREW.



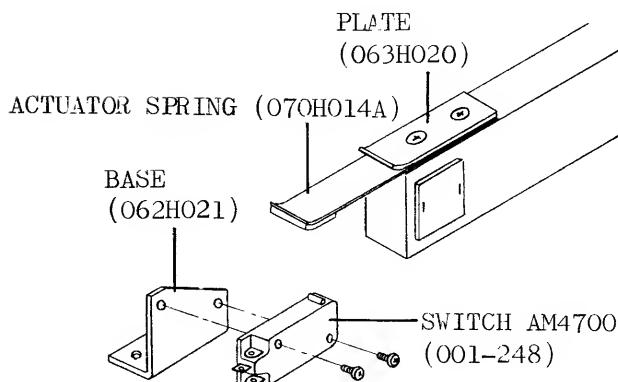
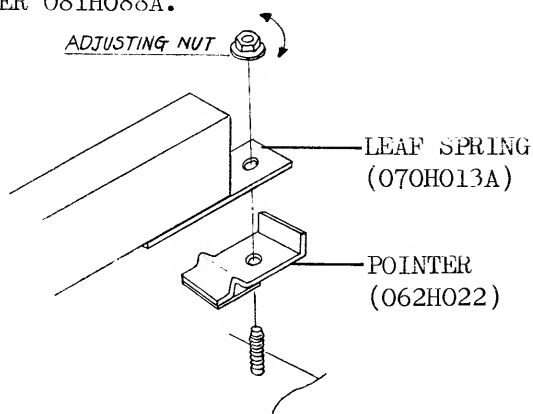
2ND VERSION

S/N 640120 AND HIGHER.

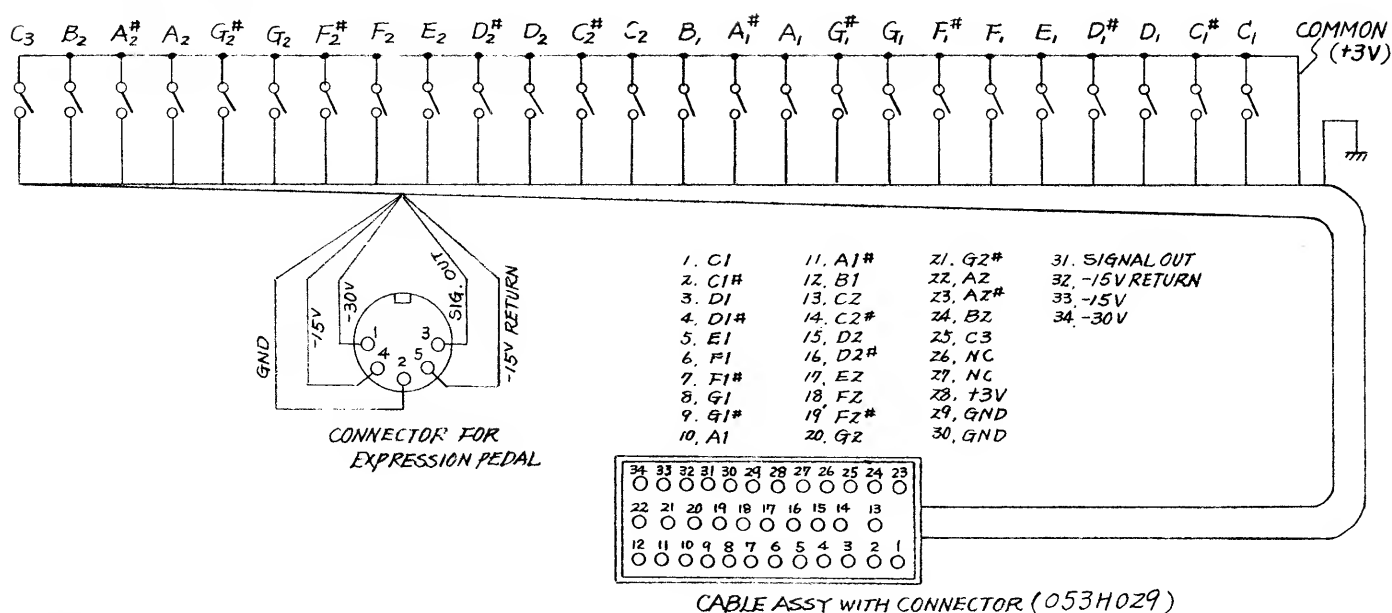
VKP-9 VKE-9



TO ADJUST SPRING ELASTICITY REMOVE
THE COVER 081H088A.



SCHEMATIC DIAGRAM



The parts list that follows includes parts used for VK-6 and VK-9.

(VK-6) parts used for VK-6 only.

(VK-9) parts used for VK-9 only.

Other parts are used commonly for both VK-6 and VK-9.

PART NO.	PART AND DESCRIPTION	PART NO.	PART AND DESCRIPTION
	PCB ASSY	018-052	Zener 05Z-11L
144H015	AGH15 (052H055) (VK-6)	018-024	Zener 05Z-15
144H016	AGH16 (052H056) (VK-6)	018-083	Zener 05Z-18U (VK-9)
141H020A	APH20A (052H069A) (VK-6)	018-084	Zener 05Z-22U
149H020B	BAH20B (052H072B) (VK-6)	019-025	LED SR103D (VK-6)
149H024C	TDH24C (052H084C) (VK-6)	019-009	LED LR0601R (VK-9)
149H026B	SPH26B (052H064B) (VK-6)	019-024	Cds cell P380 (VKE-1/9)
146H023B	PSH23B (100V) (052H071B) (VK-6)	019-026	Photo coupler P653G35584
146H024B	PSH24B (117V) (052H071B) (VK-6)	020-031	IC 723C
146H025B	PSH25P (220/240V) (052H071B) (VK-6)	020-015	IC CA3080
146H020	PSH20 (100V) (052H085)	020-024	IC 301A
146H021	PSH21 (117V) (052H085)	020-062	IC μ PC-1458
146H022	PSH22 (220/240V) (052H085)	020-010	IC TA7504M
149H015	MOH15 (052H073)	020-105	IC CA3140
145H014A	FLH14A (052H065A)	020-007	IC LM3216
145H013A	FLH13A (052H065A) (VK-9)	020-155	IC BA643
144H011	AGH11 (052H055) (VK-9)	020-156	IC AY30214
144H012	AGH12 (052H056) (VK-9)	020-075	IC TC4049
144H013	AGH13 (052H057) (VK-9)	020-040	IC TC4011
144H014	AGH14 (052H058) (VK-9)	020-157	IC TC4532
149H016	SLH16 (052H070) (VK-9)	020-158	IC TC4042
149H017	DPH17 (052H066) (VK-9)	020-090	IC TC4051
149H019B	BAH19B (052H072B) (VK-9)	020-006	IC DN811
149H021	SCH21 (052H067) (VK-9)	020-159	IC LB1500 (VK-9)
149H022	PRH22 (052H061) (VK-9)	020-050	IC LB1515 (VK-9)
149H023A	TDH23A (052H068A) (VK-9)		POTENTIOMETERS
149H025B	SPH25B (052H064B) (VK-9)	028-1013	1M Ω , A, EVHCOAS20A16
149H031	DGH31 (052H062) (VK-9)		PORTAMENTO TIME (VK-6)
141H019A	APH19A (052H069) (VK-9)	031-079	100K Ω , B, EVHCHAS20B15
149H032	DGH32 (052H062) (VK-9)		TUNE (VK-6)
146H017B	PSH17B (100V) (052H071B) (VK-9)	031-105	20K Ω , B, Double, EWKDOAS15B24
146H018B	PSH18B (117V) (052H071B) (VK-9)		VOLUME (VK-6)
146H019B	PSH19B (220/240V) (052H071B) (VK-9)	028-990	10K Ω , B, EVHCOAS15B14
149H027B	EAH27B (052H075B) (VKE-1/9)		BRILLIANCE (VK-6)
	KEY BOARD ASSY	028-989	1M Ω , A, EVHCOAS15A16
004-011	SK-263A (VK-9, upper)		PORTAMENTO TIME (VK-9)
004-012	SK-262A (VK-9, lower)	031-051	100K Ω , B, EVHCHAK15B15
004-013	SK-293A (VK-6, upper)		TUNE (VK-9)
004-014	SK-292A (VK-6, lower)	031-116	20K Ω , B, Double, EWKDOAK15B24
	SEMICONDUCTORS		VOLUME (VK-9)
017-024	Transistor 2SA733P	031-104	10K Ω , B, Double, EWKDOAS15B14
017-052	Transistor 2SA640		BRILLIANCE (VK-9)
017-034	Transistor 2SA682Y		TRIMMERS
017-128	Transistor 2SB596Y	028-003	5K Ω , B, EVTR4AA00B53
017-023	Transistor 2SC945P	028-004	10K Ω , B, EVTR4AA00B14
017-038	Transistor 2SC1222	028-010	1M Ω , B, EVTR4AA00B16
017-090	Transistor 2SD526Y	029-103	500 Ω , B, PNB04C3A501H
017-016	FET 2SK30AGR	030-245	20K Ω , EVT81AUS10B24 (VK-9)
017-036	FET E412 (ITS30546)		RESISTOR
018-014	Diode 1S2473	044-090	1 Ω 1/2W, 5% Solid
018-060	Diode 1S1885	044-099	5.6 Ω 1/2W, 5% Solid
018-057	Diode 1B2C1	044-102	10 Ω 1/2W, 5% Solid
018-058	Diode 1B2Z1	044-128	1.5K Ω 1/2W, 5% Solid
		044-094	2.2K Ω 1/2W, 5% Solid
		044-599	10M Ω 1/2W, 5% Solid
		044-193	10 Ω , 2W 10% Cement
		044-195	15 Ω , 2W 10% Cement
		044-240	82 Ω , 3W 10% Cement
		044-366A	120 Ω , 10W 10% Cement

PART NO.	PART AND DESCRIPTION	PART NO.	PART AND DESCRIPTION
044-822	100Ω, 1/4W, 1% Metal film		JACKS
044-831	1.5KΩ, 1/4W, 1% Metal film	009-015	Mono HLJ-102-1-1 KCV OUTPUT, GATE OUTPUT, BEFORE EXP INPUT, AFTER EXP INPUT, NOMAL OUTPUT, BASS SEND, BASS RETURN, LOWER SEND, UPPER SEND
044-833	3.3KΩ, 1/4W, 1% Metal film		
044-911	4.7KΩ, 1/4W, 1% Metal	009-026	Stereo HLJ-0235-1-1 LOWER RETURN, UPPER RETURN BASS OUTPUT (VK-9)
044-912	5.1KΩ, 1/4W, 1% Metal film		
044-838	10KΩ, 1/4W, 1% Metal film	012-038	Lamp socket, WBS1013 (VKE-1/9)
044-905	18KΩ, 1/4W, 1% Metal film	042-060	Terminal block 500K/3DS (220/240V)
044-846	100KΩ, 1/4W, 1% Metal film		FUSE HOLDERS
044-856	470KΩ, 1/4W, 1% Metal film	012-025	F-6 (220/240V)
044-860	1MΩ, 1/4W, 1% Metal film	012-039	SN-5051 (117V)
045-003	6-103 Resistor network		CONNECTORS
045-004	7-103 Resistor network	010-055	450DB8FL, To Revo
	CAPACITORS	010-205	77-MIP-9, To Leslie
032-095	0.47μ, 35V, K, Tantalum	010-206	MC-16LSF, VK-6 to VKP-6
032-099	1μ, 35V, K, Tantalum	010-207	MC-34LSF, VK-9 to VKP-9
032-190	1μ, 50V, Non polar	010-208	TCS-0250, To VKE-1
032-237	1000μ, 35V, ECET35R102SU Electro.	010-184	5045-06A
032-176	2200μ, 50V, ECET50R222SU Electro.	010-185	5045-07A
035-043	0.01μ, 1KV, ECQE10103M (220/240V)	010-190	5045-10A
035-104	0.01μ, 125V, ECQU1A103MC (100/117V)	010-107	5028-04A
035-164	330P, 50V, J, Styrole	010-109	5028-06A
	SWITCHES	010-111	5028-08A
001-154	Lever SW, ESL18113, REVO SPEED	010-036	2461-4C
001-116	Push SW, ESB718, REVO CANCEL	010-037	2461-6C
001-136	Slide SW, SJ0726, OUTPUT LEVEL SELECT PERCUSSION SELECT SUSTAIN SELECT DRAW BARS SELECT	010-098	5145-6A
001-251	Rotary SW, ESR-E133F20E FLYBACK MODE SELECT (VK-6)	010-088	5051-6
001-252	Rotary SW, ESR-E133F15A FLYBACK MODE SELECT (VK-9)	010-202	5051-7
001-253	Sea saw SW, 2wixII, SEMKO POWER ON-OFF	010-204	5051-10
001-158	Slide SW, ESD3946, SEMKO, 220V-240V SELECT	010-028	2139-3
001-249	SW, ESB-63 (VKP-6)	010-008	2139-4
001-248	Micro SW, AM4700 (VKP-9)	010-009	2139-6
	KNOB	010-010	2139-8
016-036	Knob No.36 Black, REVO SPEED	010-089	2759TL Terminal pin
016-004	Knob No.4 White, REVO CANCEL	010-090	2578TL Terminal pin
016-025	TK-1122 PORTAMENTO TIME FLYBACK MODE SELECT TUNE, VOLUME (VK-6) TUNE, VOLUME (VK-9)	010-147	EMCS1001 10 Pin (VK-6 until serial NO.700189)
016-002		068-032	Colar bush, NA305
	TRANSFORMERS	068-029	Colar bush, NA310
022H016C	Power transformer (100/117V)	068-033	Colar bush, NA315
022H016D	Power transformer (220/240V)	068-034	Colar bush, NB300
022-122	Output transformer, ST31		
022-034	Coil, 3.8H, 4R		
022-128	Coil, 10μH, P-7S		
	FUSES		
008-065	800mA, SEMKO (220/240V)		
008-066	1AT, SEMKO (220/240V)		
008-206	1A, 250V, MGC-UL (117V)		
008-207	1.5A, 250V, MGC-UL (117V)		
008-238	10A, 250V, MGP-UL (Pig-tailed)		
025-008	Lamp 24V, 3W, A7771 (VKE-1/9)		
048-001	Heat sink (VK-9)		

PARTS ORDERING INFORMATION

Name of part number of some of the parts is changed from those printed on previously issued parts list. When ordering replacement parts, be sure to follow the description on the present issue.

When ordering parts, be sure to include the following information:

1. Model and Serial Number
2. Part Number
3. A Description of the Part

This parts list includes all standard stock replacement parts. No attempt has been made to include every nut, bolt and screw. If the necessity for a non-listed part arises, please write describing the parts location and function as well as model and serial number of the unit.